

August 5, 2004

Utah Division of Oil, Gas & Mining 1594 W. N. Temple Suite 1210 Salt Lake City, Utah 84114-5801

RE: Wolverine Gas & Oil Company of Utah, LLC requests permission to drill the Wolverine Federal #17-4 well as an exception to Rule R649-3-3

Gentlemen:

Pursuant to Rule R649-3-3 of the State's Oil & Gas Conservation regulations, Wolverine Gas & Oil Company of Utah, LLC, hereby makes application for approval to directionally drill an oil & gas well.

Wolverine Gas & Oil Company of Utah, LLC (Wolverine) proposes to drill the Wolverine Federal #17-4 well to a total depth of 6,950 feet. Wolverine is the only operator within a 460 foot radius.

The mountainous terrain of the area is such that directional drilling is the most effective method to minimize surface disturbance. By locating the well pad on a relatively flat surface and drilling a directional well beneath this challenging topography, Wolverine can most effectively minimize surface disturbance and ensure proper utilization of resources.

Attached hereto is a plat as required by the Commissions rules and regulations.

If no objections are filed, the applicant requests that this application be approved. If objections are filed, applicant requests the matter be set for hearing and that it be advised of the hearing date.

Respectfully submitted,

Wolverine Gas & Oil Company of Utah, LLC

Authorized Agent

STATE OF UTAH

NFIDENTIAL

FORM 3

0 0 5					L, GAS AND MII				ED REPORT []
		APPLICAT	TON FOR	PERMIT TO) DRILL	······································		5. MINERAL LEASE NO: UTU-73528	6. SURFACE: Fee
1A. TYPE OF WO	rk: C	RILL 🔽	REENTER [DEEPEN				7. IF INDIAN, ALLOTTEE OF	TRIBE NAME:
B. TYPE OF WE	LL: OIL 🗹	GAS 🗌 🗡	OTHER	SIN	GLE ZONE M	ULTIPLE ZONI	₽□¦	8. UNIT of CA AGREEMENT Wolverine Fed. E	
2. NAME OF OPE	RATOR:						-	9. WELL NAME and NUMBE	•
		l Company o	of Utah, LLC				\Box	Wolverine Feder	
3. ADDRESS OF One Riverfr		CITY Grand	l Rapids _{STA}	TE MI ZIP 49		E NUMBER:) 458-11 <i>5</i> 0		10. FIELD AND POOL, OR V Wildcat	VILDCAT:
4. LOCATION OF	•	·						11. QTR/QTR, SECTION, TO MERIDIAN:	OWNSHIP, RANGE,
				7,T23S,R EL- Secl	1W SENW 7,T23S,R1	NW SI	е	NWSE 17 23	S 1W S
		1	REST TOWN OR PO	ST OFFICE:				12. COUNTY:	13. STATE: UTAH
	South of S							Sevier	
appr. 200'	ONEAREST PRO	PERTY OR LEASE L	INE (FEET)	16. NUMBER O	FACRES IN LEASE:	8236 ac	17. NU	MBER OF ACRES ASSIGNE	D TO THIS WELL:
18. DISTANCE TO		L (DRILLING, COMF	LETED, OR	19. PROPOSED	DEPTH:	0230 ac	20. BO	ND DESCRIPTION:	
APPLIED FOR appr. 600'	R) ON THIS LEAS	E (FEET)				6,950	BL	M # Wy 3329	
21. ELEVATIONS	(SHOW WHETH	ER DF, RT, GR, ETC	S.):	22. APPROXIMA	ATE DATE WORK WILL S	TART:	23. ES	TIMATED DURATION:	
5,740' _	GR			9//5/200)4		40	days	
24.	_		PROPOS	ED CASING A	ND CEMENTING	PROGRAM			
SIZE OF HOLE	CASING SIZE	GRADE, AND WEI	T PER FOOT	SETTING DEPTH	CI	EMENT TYPE, QUA	ANTITY, Y	(IELD, AND SLURRY WEIGH	п
20	14		λA	80	Conductor				
12 1/4	9 5/8	36 ppf	J65 STC	1,510	lead:c,360sx, 1	.78,	12.8/t	ail:g, 280sx, 1.20	0, 15.6
8 3/4	5 1/2	17 ppf	L80 LTC	6,950	lead:Poz, 750s	x, 1.76, 13	.0/tail:	Poz, 350sx, 1.4	9 13.4
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****		13							
25.		200	•	ATTA	CHMENTS		DI	V OF OIL, GAS	& MINING
VERIFY THE FOL	LOWING ARE AT	TACHED IN ACCOR	RDANCE WITH THE	UTAH OIL AND GAS C	ONSERVATION GENERA	AL RULES:			
WELL PL	AT OR MAP PRI	/ PARED BY LICENSI	ED SURVEYOR OR E	ENGINEER	COMPLETE	E DRILLING PLAN			
EVIDENCE	E OF DIVISION O	OF WATER RIGHTS	APPROVAL FOR US	SE OF WATER	FORM 5, IF	OPERATOR IS PE	ERSON O	R COMPANY OTHER THAN	THE LEASE OWNER
	\mathscr{A}								
	7								
NAME (PLEASE	PRINT) Richa	rd Moritz		······································	TITLE VIC	e President	t, Lan	d & Legal	
SIGNATURE	Inl	IM	nok		DATE	07/22/	<u> 200</u>	4	
(This space for Sta	ite use only)		\supset		Cual	418.965	χ	B4L 419	188 V
					Juir	429 5391	64		
) (2. Nati 1				,	1	4 2	94902 Y
API NUMBER AS	SIGNED: <u>4</u>	3-041-3	0035		APPROVAL:	38. 80	547		ONION

(11/2001)

(See Instructions on Reverse Side)

-111.93325 -111.93050

LATITUDE = $38'48'18.901^{\circ}$ (38.805250278) LONGITUDE = -111'56'01.826'' (111.933840556)

PROJECT

Wolverine Gas & Oil Company of Utah, LLC.

WELL LOCATION, LOCATED AS SHOWN IN THE SE 1/4 OF THE NW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M. SEVIER COUNTY, UTAH

LEGEND

► = SECTION CORNERS LOCATED

= QUARTER SECTION CORNERS LOCATED

B = PROPOSED WELL HEAD

NOTE: THE PURPOSE OF THIS SURVEY WAS TO PLAT THE WOLVERINE FEDERAL #17-4 LOCATION. LOCATED IN THE SE 1/4 OF THE NW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M. SEVER COUNTY.

BASIS OF ELEVATION

ELEVATION BASED ON U.S.G.S. BENCH MARK LOCATED IN THE SW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.



CERTIFICATE

THIS IS TO CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION, AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RYAN W. SAVAGE, L.S. #183343

DATE



Jones & DeMille Engineering

1535 South 100 West — Richfield, Utoh 84701 Phone (435) 896-8266 Fox (435) 896-8268 www.jonesonddemille.com

Well Location Plat for

Wolverine Gas & Oil Company of Utah, LLC.

DESIGNED	SURVEYED T.W.G.	CHECKED R.W.S.	K.B.B.	PROJECT NO.	SHEET NO.
July 2004		DWG.NAME Wells	SCALE 1" =1000'	0406-160	1



United States Department of the Interior

BUREAU OF LAND MANAGEMENT RICHFIELD FIELD OFFICE 150 East 900 North Richfield, Utah 84701



In Reply Refer To:

3160 (UT-050)

August 10, 2004

Mr. Richard D. Moritz
Wolverine Gas and Oil Company of Utah, LLC
One Riverfront Plaza
55 Campau NW
Grand Rapids, Michigan 49503

Dear Mr. Moritz:

On July 22, 2004, four Applications for Permit to Drill and on July 28, 2004, three additional Applications for Permit to Drill were filed in this office. These seven wells are Wolveine #17-3, 17-4, 17-5, 16-1, 18-1, 19-1, and 20-1 and are on Federal lease UTU-73528. The well pad locations for these wells are in Section 17, T. 23 S., R. 1 W., SLM, Sevier County, Utah. Your applications have been reviewed for completeness in accordance with the provisions of the Federal regulations and the Onshore Oil and Gas Orders.

Based on Onshore Order 1, with the reference to the appropriate section, the following items are missing or need clarification in your applications:

Section III.G. 3, Form 3160-3 or as an attachment:

- c. Type of drilling tools (rotary or cable).
- d. Casing condition (new or used).

Section III.G. 4. a., Drilling Plan:

- (2) The anticipated contents of each geologic structure or stratum (water, oil, gas or other minerals).
- (3) Pressure control schematic.
- (4) As these are exploratory wells, the design factors for each casing string. (See Onshore Order #2, *Drilling Operations*, III. B. Casing and Cementing Requirements.)

Section III.G. 4. b., Surface Use Program:

(3) Location of existing wells. For 17-3, 17-4, 17-5, and 16-1, the Location Map does not show the existing Well 17-2. For 18-1, 19-1, and 20-1, the Location Map does not show the existing well 17-1. Are any water wells within the one-mile parameter of the Order? At the proposed well site for 17-3, 17-4, 17-5, and 16-1, three well pads are shown. Two of the pads are assumed to be

the existing well pad (17-1) and the proposed pad (17-3 and others); however, the third pad is not identified.

(4) Location of proposed production facilities.

- (5) Location of water supply. Be specific as to the source, if it is non-Federal.
- (9) Well site layout. Living facilities and the orientation of the rig and other facilities are not included on a layout.
- (11) Surface Ownership. The surface ownership of the well and access road shall be indicated. Where the surface of the well is privately owned, the operator shall include the name, address, and phone number, if known, of the surface owner. If privately owned, the existence of an agreement between the operator and owner needs to be provided.

All the above items will be necessary before approval can be granted. All other portions of your application are in place, and we will continue to process your application up to the point the missing information prevents further action.

If future applications are filed, we request that Wolverine Gas and Oil adhere closely to Onshore Order No. 1, Section III. G. Components of a Complete Application for Permit to Drill. In the order, the Drilling Plan and the Surface Plan items are enumerated for ease of reference during both the preparation and the review of a proposal. All these items are required by regulation, and following the outline in the Order will facilitate the review of your applications. Although some items appear unnecessary or outdated, please provide the information. Unless specifically requested, additional information is unnecessary and may lengthen the review time frames.

In addition, the Application for Permit to Drill package does not need to be filed in a binder for the BLM. BLM records are kept in a file folder, so we remove the binder for ease of filing for our record keeping.

If you have any questions, please contact Michael Jackson at (435) 896-1522. Technical questions on the Drilling Plan may be directed to Al McKee at (801) 539-4045.

Sincerely,

Gary L. Hall

Assistant Field Manager

Tang S. Half

cc:

WORKSHEET APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 08/05/2004	API NO. ASSIGNI	ED: 43-041-3003	55
WELL NAME: WOLVERINE FED 17-4 OPERATOR: WOLVERINE GAS & OIL CO (N1655 CONTACT: RICHARD MORITZ	phone number: 6	16-458-1150	
PROPOSED LOCATION: SENW 17 230S 010W	INSPECT LOCATN	I BY: / /	
SENW 17,079 2305 010W SURFACE: 1736 FNL 2298 FWL [W]SC BOTTOM: 1980 FSL 1980 FEL	Tech Review	Initials	Date
SEVIER WILDCAT (1)	Engineering Geology		
LEASE TYPE: 1 - Federal LEASE NUMBER: UTU-73528	Surface		
SURFACE OWNER: 4 - Fee PROPOSED FORMATION: NAVA COALBED METHANE WELL? NO	LATITUDE: 38.8 LONGITUDE: 111.	05 4 7 93325	
Plat Plat Bond: Fed[1] Ind[] Sta[] Fee[] (No. WY 3329 Potash (Y/N) Oil Shale 190-5 (B) or 190-3 or 190-13 Water Permit (No. 63-2529 NW RDCC Review (Y/N) (Date: Pee Surf Agreement (Y/N) Wowners is Surface owner	R649-3-3. E Drilling Uni Board Cause Eff Date: Siting:	General rom Qtr/Qtr & 920' Exception	
COMMENTS: Needs Preside	(29-87-04)		
STIPULATIONS: 1- Edura A 2-Spacing St 3-STATTME	eproved if WT OF BASIS	S	



August 18, 2004

Utah Division of Oil, Gas & Mining 1594 W. N. Temple Suite 1210 Salt Lake City, Utah 84114-5801

RE: Wolverine Gas & Oil Company of Utah, LLC requests permission to drill the Wolverine Federal #17-4

Gentlemen:

Pursuant to Rule R649-3-3-11 of the State's Oil & Gas Conservation regulations, Wolverine Gas & Oil Company of Utah, LLC, hereby makes application for approval to directionally drill an oil & gas well.

Wolverine Gas & Oil Company of Utah, LLC (Wolverine) proposes to drill the Wolverine Federal #17-4 well to a total depth of 6,950 feet and is an exception to Rule R-649-3-3. Wolverine is the surface owner as well as the only leasehold operator within a 460 foot radius of the bore hole.

The mountainous terrain of the area is such that directional drilling is the most effective method to minimize surface disturbance. By locating the well pad on a relatively flat surface and drilling a directional well beneath this challenging topography, Wolverine can most effectively minimize surface disturbance and ensure proper utilization of resources.

Attached hereto is a plat as required by the Commissions rules and regulations.

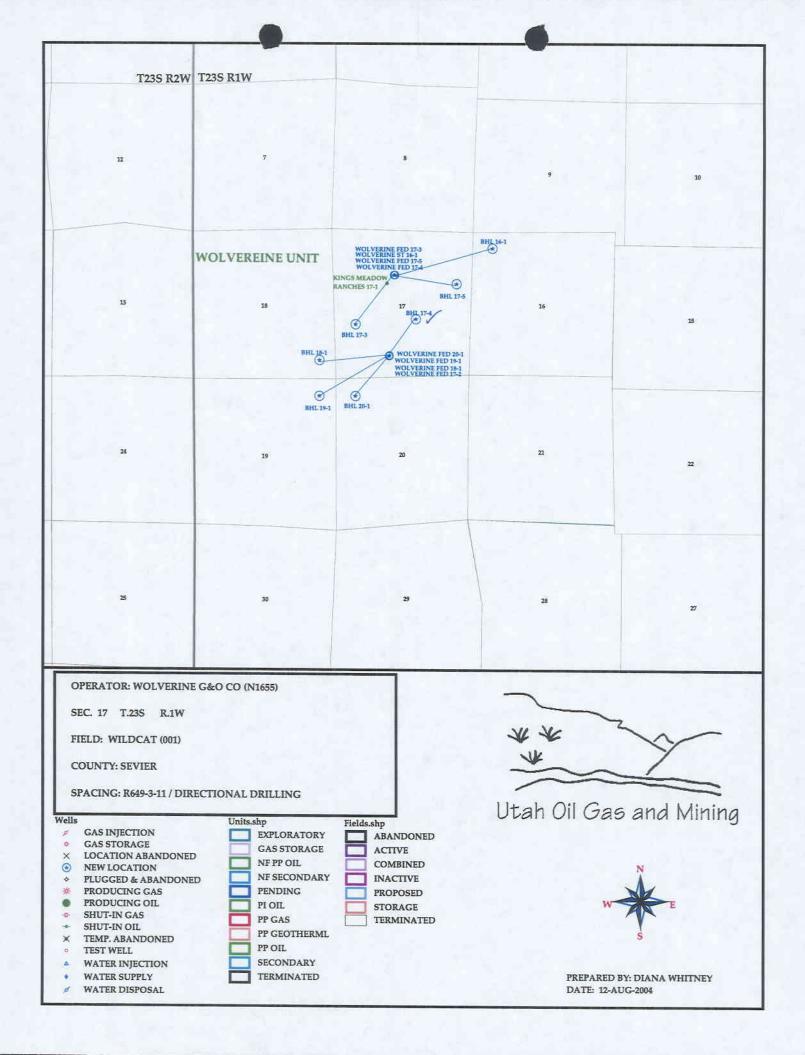
If no objections are filed, the applicant requests that this application be approved. If objections are filed, applicant requests the matter be set for hearing and that it be advised of the hearing date.

Respectfully submitted,

Wolverine Gas & Oil Company of Utah, LLC

Shawn Burd Authorized Agent AUG 1 9 2004

DIV. OF OIL, GAS & MINING



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United States Department of the Interior

BUREAU OF LAND MANAGEMENT Utah State Office P.O. Box 45155

P.O. Box 45155 Salt Lake City, Utah 84145-0155

IN REPLY REFER TO: 3160 (UT-922)

August 16, 2004

Memorandum

To:

Field Office Manger, Richfield Field Office

From:

Michael Coulthard, Petroleum Engineer

Subject:

2004 Plan of Development Wolverine Unit Sevier County,

Utah.

Pursuant to email between Diana Whitney, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2004 within the Wolverine Unit, Sevier County, Utah.

API#

WELL NAME

LOCATION

(Proposed PZ Navajo)

43-041-30032 Wolverine Federal 20-1 Sec 17 T23S R01W 0833 FSL 1925 FWL BHL Sec 20 T23S R01W 0660 FNL 0660 FWL

43-041-30033 Wolverine Federal 19-1 Sec 17 T23S R01W 0857 FSL 1919 FWL BHL Sec 19 T23S R01W 0660 FNL 0660 FEL

43-041-30034 Wolverine Federal 18-1 Sec 17 T23S R01W 0845 FSL 1922 FWL BHL Sec 18 T23S R01W 0660 FSL 0660 FEL

43-041-30035 Wolverine Federal 17-4 Sec 17 T23S R01W 1736 FNL 2298 FWL BHL Sec 17 T23S R01W 1980 FSL 1980 FEL

43-041-30036 Wolverine Federal 17-3 Sec 17 T23S R01W 1736 FNL 2283 FWL BHL Sec 17 T23S R01W 1980 FSL 0660 FWL

43-041-30037 Wolverine State 16-1 Sec 17 T23S R01W 1736 FNL 2253 FWL BHL Sec 16 T23S R01W 0660 FNL 0660 FWL

43-041-30038 Wolverine Federal 17-5 Sec 17 T23S R01W 1736 FNL 2268 FWL

BHL Sec 17 T23S R01W 1980 FNL 0660 FEL

ON-SITE PREDRILL EVALUATION Division of Oil, Gas and Mining

OPERATOR: Wolverine Gas and Oil Company

WELL NAME & NUMBER: Wolverine Federal 17-4

API NUMBER: 43-041-30035

LEASE: Fed FIELD/UNIT:

LOCATION: 1/4,1/4 SENW Sec: 17 TWP: 23S RNG: 1W 1736 FNL 2298 FWL LEGAL WELL SITING: 460 F SEC. LINE; 460 F 1/4,1/4 LINE; 920 F ANOTHER WELL.

GPS COORD (UTM): X= 428547 E; Y= 4295894 N SURFACE OWNER: Wolverine.

PARTICIPANTS

M. Jones (DOGM), Shaun Burd (Western Land Services), Ed Bonner (SITLA).

REGIONAL/LOCAL SETTING & TOPOGRAPHY

Proposed location is ~3.5 miles south of Sigurd, in Sevier County, Utah. Staked location lies east of Highway 24 on Wolverine Gas and Oil Company owned property. Steep hills surround the sagebrush dominated flat, from where the well is proposed to be drilled. Access to this well will be along existing Wolverine oil field roads from UDOT maintained roads. No new access road will be built for this location, as it will utilize existing access. The direct area drains to the northwest, into Brine Creek then further west eventually into the Sevier River, a year-round live water source ~2.5 miles northwest of the proposed location. Dry washes run throughout the area.

SURFACE USE PLAN

CURRENT SURFACE USE: Grazing and wildlife habitat.

PROPOSED SURFACE DISTURBANCE: $180' \times 360' \text{ w}/ 240' \times 100' \times 10'$ (excluded) pit.

LOCATION OF EXISTING WELLS WITHIN A 1 MILE RADIUS: 8 proposed, producing, and/or PA wells are within a 1 mile radius of the above proposed well.

LOCATION OF PRODUCTION FACILITIES AND PIPELINES: On location and along roadway to production facilities south of 17-1 location.

SOURCE OF CONSTRUCTION MATERIAL: Obtained locally and trucked to site.

ANCILLARY FACILITIES: None anticipated.

WILL DRILLING AT THIS LOCATION GENERATE PUBLIC INTEREST OR CONCERNS? (EXPLAIN): This well will be drilled on a pad consisting of 4 wells, all to be drilled directionally. The pad sits next to a recently drilled vertical well, Kings Meadow Ranches 17-1. Highway 24 runs past all of this activity, therefore any and all activity associated with these wells can be seen by the public, which may increase public interest and/or concern.

WASTE MANAGEMENT PLAN:

Portable chemical toilets will be emptied into the municipal waste treatment system; garbage cans on location will be emptied into centralized dumpsters, which will be emptied into an approved landfill. Drilling fluid, and completion/frac fluid will be removed from the pit upon completion of the well. Cuttings will be buried in the pit unless oil based mud is used. If oil based mud is used disposal of the cuttings should be discussed with the Division. Used oil from drilling operations and support will be hauled to a used oil recycling facility. Produced water will be disposed of at an approved facility.

ENVIRONMENTAL PARAMETERS

AFFECTED	FLOOD	PLA	INS	AND/OR	WETLAN]	DS:	Dry	washes	run	throughout	the
immediate	area	of	the	propose	ed well	100	catio	n.			

FLORA/FAUNA: Sagebrush, greasewood, winterfat, 4-wing salt brush, deer rodents, fowl.

SOIL TYPE AND CHARACTERISTICS: Rocky clay.

SURFACE FORMATION & CHARACTERISTICS: Arapien Shale

EROSION/SEDIMENTATION/STABILITY: __Erosive upon disturbance.

PALEONTOLOGICAL POTENTIAL: None observed.

RESERVE PIT

CHARACTERISTICS: Dugout earthen, 240'x100'x10', exterior to location.

LINER REQUIREMENTS (Site Ranking Form attached): Liner required.

SURFACE RESTORATION/RECLAMATION PLAN

As per Wolverine.

SURFACE AGREEMENT: Wolverine owns the surface.

CULTURAL RESOURCES/ARCHAEOLOGY: Mountain States Archaeology.

OTHER OBSERVATIONS/COMMENTS

Some alterations are planned to a dry wash on the north side of the location. The appropriate permits with the Division of Water Rights will be obtained prior to any construction.

ATTACHMENTS

Photos of this location were taken and placed on file.

Mark L. Jones
DOGM REPRESENTATIVE

September 7, 2004 / 3:00 pm DATE/TIME

Site-Specific Factors	Donleine	_
	Ranking	Site Ranking
Distance to Groundwater (feet) >200	0	
100 to 200 75 to 100	5	
25 to 75	10 15	
<25 or recharge area	20	0
Distance to Surf. Water (feet)		
>1000 300 to 1000	0 2	
200 to 300	10	
100 to 200 < 100	15 20	0
Distance to Nearest Municipal		
Well (feet)		
>5280 1320 to 5280	0 5	
500 to 1320	10	
<500	20	0
Distance to Other Wells (feet)		
>1320 300 to 1320	0 10	
<300	20	0
Native Soil Type		
Low permeability Mod. permeability	0	
High permeability	10 20	10
Fluid Type		
Air/mist	0	
Fresh Water TDS >5000 and <10000	5 10	
TDS >10000 or Oil Base Mud Fluid	15	
containing significant levels of hazardous constituents	20	10
Drill Cuttings Normal Rock	0	
Salt or detrimental	10	0
Annual Precipitation (inches)		
<10 10 to 20	0 5	
>20	10	5
Affected Populations		
<10 10 to 30	0 6	
30 to 50	8	
>50	10	0
Presence of Nearby Utility Conduits		
Not Present Unknown	0	
Present	10 15	10

Sensitivity Level I = 20 or more; total containment is required, consider criteria for excluding pit use. Sensitivity Level II = 15-19; lining is discretionary.

35

(Level <u>I</u> Sensitivity)

Sensitivity Level III = below 15; no specific lining is required.

Final Score

DIVISION OF OIL, GAS AND MINING APPLICATION FOR PERMIT TO DRILL STATEMENT OF BASIS

OPERATOR:	Wolverine Gas and Oil Company	
WELL NAME & NUMBER:	Wolverine Federal 17-4	
API NUMBER:	43-041-30035	
LOCATION: 1/4,1/4 SENW Se	cc: <u>17 TWP: 23 S_RNG: 1 W_1736 FNL 2298 FWL</u>	

Geology/Ground Water:

This location is placed in the High Plateaus section of the Colorado Plateau physiographic province in western central Utah. Some people have characterized this area as being in the Basin and Range - Colorado Plateau transition zone. The location is on fee acreage a few miles east of the Sevier River, in the Peterson Creek drainage, a tributary of Brine Creek, which subsequently flows into the Sevier River. The rancher heavily allocates water rights for the local springs, which arise from the volcanic rocks just to the east, for agriculture.

The well will likely spud into a thin alluvium covering the evaporite-rich Jurassic age Arapien Shale. The proposal calls for a saturated salt mud system from below the surface casing into the Navajo Sandstone. The quality of any surface water that manages to escape upstream allocation is diminished as it flows past the location and into Brine Creek, owing to the evaporite minerals in the Arapien Shale. Any water contained in the Arapien Shale is also likely to be of poor quality. A Division of Water Rights publication notes that aquifers in close proximity to the Arapien Shale are also likely to contain ground water with high TDS levels. Inasmuch as there do not appear to be any intervening aquifers documented in this area, which lie between the Arapien Shale and the underlying Navajo Sandstone, it is unlikely that any high quality ground water will be encountered.

At this location it is unlikely that any high quality ground water resource will be encountered in the Navajo, at that depth, in any strata drilled below the Navajo or at all. The proposed casing, cementing and drilling fluid program should be sufficient to control and isolate the poor quality ground waters expected to be encountered in a well at this location. Two surface water rights, a point to point right and an underground water right are found within a mile to the east. The underground water right is for a 156' deep well more than half a mile east.

Reviewer: Christopher J. Kierst Date: October 19, 2004

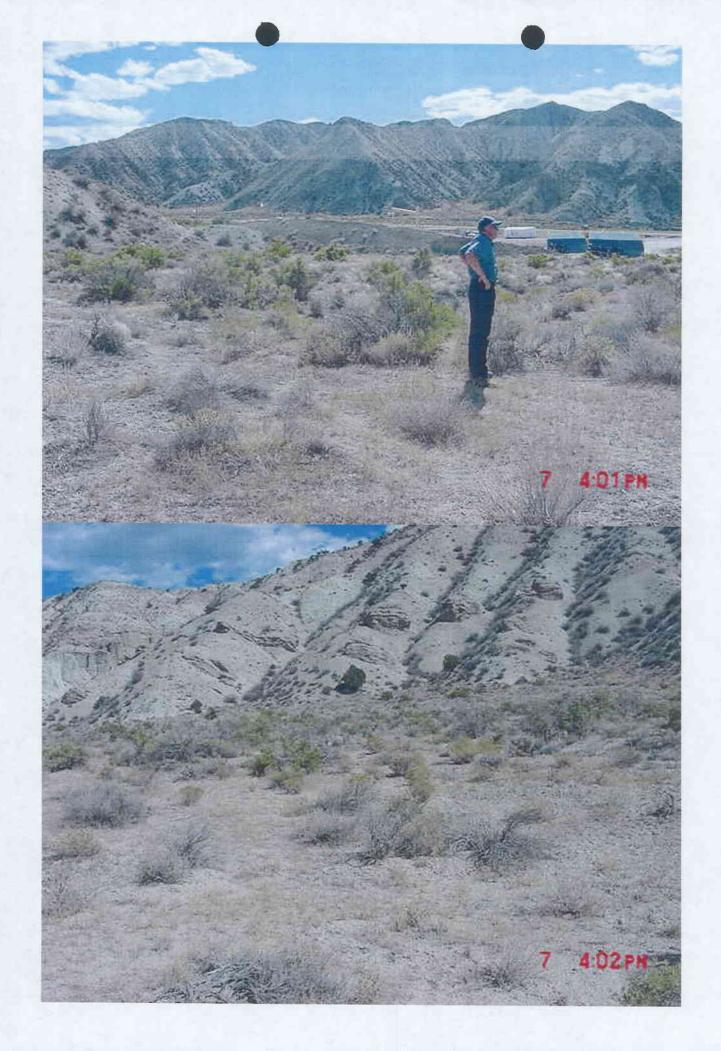
Surface:

Proposed location is ~3.5 miles south of Sigurd, in Sevier County, Utah. Staked location lies east of Highway 24 on Wolverine Gas and Oil Company owned property. Steep hills surround the sagebrush dominated flat from which the well is proposed to be drilled. Access to this well will be along existing Wolverine oil field roads from UDOT maintained roads. No new access road will be built for this location, as it will utilize existing access. The direct area drains to the northwest, into Brine Creek then further west eventually into the Sevier River, a year-round live water source ~2.5 miles northwest of the proposed location. Dry washes run throughout the area. Some alterations are planned to a dry wash on the north side of the location. The appropriate permits with the Division of Water Rights will be obtained prior to any construction. Shaun Burd, Western Land Services, represented Wolverine Gas and Oil, while Ed Bonner was in attendance, representing the SITLA royalty interest. Sevier County was invited but chose not to attend this on-site evaluation.

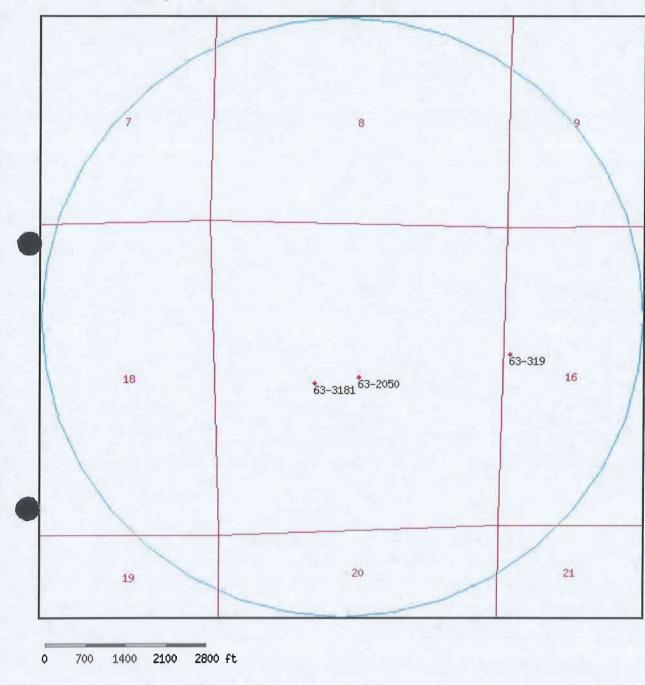
Reviewer: Mark L. Jones Date: October 14, 2004

Conditions of Approval/Application for Permit to Drill:

- 1. A synthetic liner with a minimum thickness of 12 mills shall be properly installed and maintained in the reserve pit.
- 2. Diversion of drainages around the pad.
- 3. Berm the location.







Water Rights



WRPLAT Program Output Listing

Version: 2004.03.26.00

Rundate: 10/20/2004 05:00 PM

Radius search of 5280 feet from a point S1736 E2298 from the NW corner, section 17, Township 23S, Range 1W, SL b&m Criteria:wrtypes=W,C,E podtypes=all status=U,A,P usetypes=all

WR Number	Diversion Type/Location	Well Log	Status	Priority	Uses	CFS ACFT	Owner Name
63-2050	Point to Point		P	19030000	os	0.010 0.000	RICHFIELD DISTRICT USA BUREAU OF LAND MANAGEMENT
	0 0 17 23S 1W SL						150 EAST 900 NORTH
<u>63-3180</u>	Surface		P	18700000	I	3.160 0.000	G. W. NEBEKER
	S2900 E1800 NW 17 23S 1W SL						SIGURD UT 84657
63-3181	Surface		P	18700000	DS	0.010 0.000	G. W. NEBEKER
	S2900 E1800 NW 17 23S 1W SL						SIGURD UT 84657
63-319	Underground		P	19560121	S	0.015 0.000	A. BRYANT AND J. LLEWELLYN YOUNG
	N330 E100 W4 16 23S 1W SL						RICHFIELD UT 84701

Natural Resources | Contact | Disclaimer | Privacy Policy | Accessibility Policy

STATE OF UTAH - DIVISION OF WATER RIGHTS - DATA PRINT OUT for 63-319(A27813)

(WARNING: Water Rights makes NO claims as to the accuracy of this data.) RUN DATE: 10/20/2004 Page 1

WRNUM:	63-319	.24	APPLICATION,	CLAIM NO.		CERT.				
OWNERS	HIP****	******	******	·********	******	*****	 *************	*****	*******	********
NAME: ADDR:	A. Brya Richfie	nt and J ld UT 84	. Llewellyr 701	n Young						
LAND O	WNED BY	APPLICA	NT?							
DATES,	ETC.**		******	******		*****	*******	*****	********	********
FILED: Protes EXTENS RENOVA	tEnd: ION:		PRIORITY: PROTESTED: ELEC/PROOF RECON REQ:	01/21/19 : [No ::[56 PUB BEGAN:] HEARNG HLD:] ELEC/PROOF: TYPE: {		PUB ENDED: SE ACTION: [CERT/WUC:]]	NEWSPAPER: ActionDate:02/28/195 LAP, ETC:	7 PROOF DUE: PROV LETTER:
PD Boo	k No.	Map	:							
Type o	f Right	: Applic	ation to Ar	propriate	Source of	Info: A	Application to App	ropriate	e Status: No Prf Rec	I
LOCATIO	ON OF W								*******	
								******	**************	**************
FLOW:	0.015 c	Es			SOUR	CE: Und	derground Water We	11		
COUNTY	: Sevie:	r	COMMON DESC	RIPTION:						
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November 9, 2004

Diana Whitney Utah Division of Oil, Gas & Mining 1594 West North Temple, Suite 1210 Salt Lake City, Utah 84114-5801

Re: WGO-04-004-ARA

Dear Diana,

Enclosed you will find the APD, POD packet and the drilling prognosis for the Wolverine Federal #17-4 well. Once again the on-site was completed by Mark Jones and the enclosed information defines these changes.

If you have any questions on this matter, please contact me at (435) 896-1943, cell (435) 979-4689.

Sincere

Shawn Burd

RECEIVED NOV 1 0 2004

DIV. OF OIL, GAS & MINING

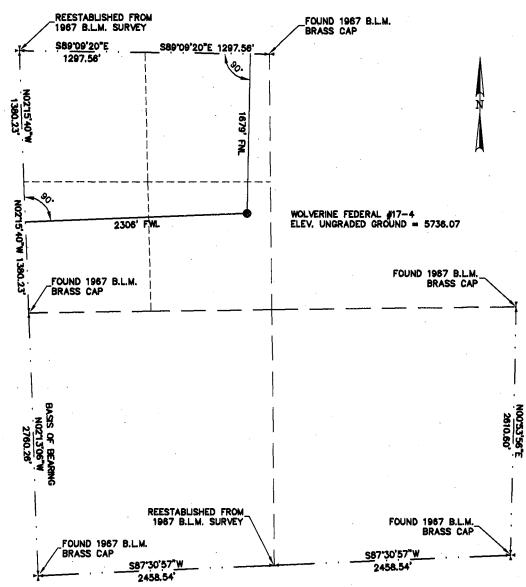
STATE OF UTAH	4
DEPARTMENT OF NATURAL RESOURCES	
DIVISION OF OIL, GAS AND MINING	

AMENDED REPORT	
(highlight changes)	

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Section 17, T.23 S., R.1 W., S.L.B. & M.



BASIS OF BEARINGS

BASIS OF BEARING USED WAS NO2"3'06"W BETWEEN THE SOUTHWEST CORNER AND THE WEST QUARTER CORNER OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.

LATITUDE = 38'48'18.901" (38.805250278) LONGITUDE = -111'56'01.826" (111.933840556)

PROJECT

Wolverine Gas & Oil Company of Utah, LLC.

WELL LOCATION, LOCATED AS SHOWN IN THE SE 1/4 OF THE NW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M. SEVIER COUNTY, UTAH

LEGEND

₩ = SECTION CORNERS LOCATED

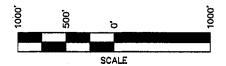
► QUARTER SECTION CORNERS LOCATED

PROPOSED WELL HEAD

NOTE: THE PURPOSE OF THIS SURVEY WAS TO PLAT THE WOLVERINE FEDERAL #17-4 LOCATION. LOCATED IN THE SE 1/4 OF THE NW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M. SEVIER COUNTY.

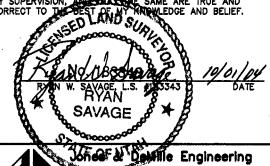
BASIS OF ELEVATION

ELEVATION BASED ON U.S.G.S. BENCH MARK LOCATED IN THE SW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.



CERTIFICATE

THIS IS TO CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION, AND THAT THE SAME ARE TRUE AND CORRECT TO THE SET OF MY KNOWLEDGE AND BELIEF.



1833: South 100 West - Richfield, Utah 84701 Phone (435) 896-8286

Fax (435) 896—8266 Fax (435) 896—8268 www.jonesanddemills.com

Well Location Plat for

Wolverine Gas & Oil Company of Utah, LLC.

	DESIGNED	SURVEYED	CHECKED		PROJECT NO.	SHEET NO.
		T.W.G.	R.W.S.	K.B.B.	0400 400	
	DATÉ		DWG.NAME	SCALE	0406-160	, ,
_	Sept. 2004		Wells	1" =1000'		<u></u>

PROJECT PLAN OF DEVELOPMENT AND MASTER SURFACE USE PLAN

Wolverine FEDERAL #17-4

NAME OF APPLICANT:

Wolverine Gas and Oil Company of Utah,

LLC

One Riverfront Plaza, 55 Campau NW Grand Rapids, Michigan 49503-2616

PROJECT NAME:

"Wolverine Federal #17-4"

NW/SE of Section 17

Township 23 South - Range 1 West

ATTACHMENTS:

A.) Project Map/Survey

B.) Well Site Location Layout

C.) Typical Cross Sections (Cut and Fill)D.) Wildlife & Vegetative Species of

Concern Summary

E.) Cultural Resource Survey Report

I. DESCRIPTION OF PROJECT:

Wolverine Gas and Oil Company of Utah, LLC (Wolverine) proposes to drill and explore for hydrocarbons, using a directional drilling program, from the Navajo Formation at depths of approximately 4,810' – 7,036' and approximately 8,062' – 9,100' within the Wolverine Federal Exploration Unit situated in Sevier County, Utah:

TOWNSHIP 23 SOUTH, RANGE 1 WEST

Northwest Quarter of Southeast Quarter (NW/SE) of Section 17

Well Name & No.	Target	Elev.	Location	TD	Footages
					
LEASE # UTU-73528					
Wolverine Federal #17-4	Navajo 1 and 2	5737°	NW SE Sec 17, T23S-R1W	6,950°	1,679' FNL; 2,306' FWL

The attached Project Map (Attachment A) indicates the proposed well site and its intended configuration. Additionally, the existing access route is indicated. This well is being drilled within the "Wolverine Federal Exploration Unit" and upon privately owned surface.

Mineral rights within the Wolverine Federal Exploration Unit are owned by a variety of interests and are federally owned at the target bottom-hole location for this proposed well. The proposed surface plan will be reviewed and inspected by the appropriate regulatory agencies, state and federal, to ensure proper utilization of the surface reflecting an effort by Wolverine to minimize surface disturbance and waste. Appropriate Onshore Oil and Gas Orders and those of the Utah Division of Oil, Gas and Mining will be followed in the constructing, drilling, completion, operation, plugging and surface reclamation of this well.

The project is situated within an area that is referred to by the Utah Division of Oil, Gas and Mining (Statement of Basis, Kings Meadow Ranches 17-1, October 21, 2003) as "... placed in the High Plateaus section of the Colorado Plateau physiographic province in western central Utah. Some people have characterized this area as being in the Basin and Range – Colorado Plateau transition zone." The drill site itself is located in a flat area between steep hills and is contiguous to Highway 24 from which access to this site will be established. The flat area is dominated by sagebrush – grass communities and the nearby hillsides are dominated by Pinyon Pine – Juniper communities. The access route consists of an improved driveway off from Highway 24 entering onto the well site. BLM road construction standards will be adhered to as new improvements are constructed.

Wolverine's proposed "Wolverine Federal #17-4" project is most easily accessible from Sigurd, Utah. From Sigurd, one would drive down Highway 24 heading east/southeasterly. At mile marker 13, drive approximately 0.6 miles and turn easterly onto the existing access road driving approximately 200 yards to the proposed well pad location.

Surface water is located in the area primarily in the form of the Sevier River, in the Peterson Creek drainage, a tributary of Brine Creek. Local springs arising from the volcanic rocks and ephemeral drainages also exist in the area including a drainage way situated along Highway 24. The Sevier River is approximately three (3) miles west of this proposed location.

Geology and Soil Types

Again quoting from the "Division of Oil, Gas and Mining, Statement of Basis, Kings Meadow Ranches 17-1", the well "...will likely spud into a thin alluvium covering the evaporate-rich Jurassic age Arapien shale." "The Arapien Shale may have been somewhat intruded or elevated into the area between the Sevier Fault and the considerable parallel secondary faulting mapped in the Cedar Mountain – Black Mountain area..." It is anticipated that from surface to approximately 400 feet in depth, the lithology of the Quaternary will consist of unconsolidated sediments.

The soil type classified at the Wolverine Federal #17-4 wellsite is the Billings silty clay loam. This soil type is a fine-silty, mixed calcareous, mesic Typic Torrifluvents and is usually found in areas containing two (2) to five (5) percent slopes. The soil is a deep, drained, silty clay loam. It features a light gray, moderately alkaline, strongly calcareous, silty clay loam surface soil that is approximately ten (10) inches thick. The subsoils consist of a light gray, moderately alkaline, friable, silty clay loam approximately 32 inches thick. The substrate material is a light gray, moderately alkaline, friable, silty clay loam with a small amount of gypsum veining.

Assuming that the drilling and completion of this well results in its ability to commercially produce hydrocarbons, appropriate market connections will be made upon proper permitting of such activities by all agencies having jurisdiction over said activities.

II. SOIL EROSION CONTROL MEASURES:

The well pad will be sloped at about 1%, in the direction of the site's drainage so as to provide for a well-drained work area during drilling operations. Appropriate collection and infiltration basins will be constructed in the sloped area of the drill pad.

In all fill areas, the edges shall be diked to control run off.

Appropriate drill site drainage and sedimentation control measures will be incorporated in the operational plan. These may include utilization of earthen dikes along the fill portion of the drilling pad perimeter, stabilization of slopes as needed, location of the reserve pits in the cut portion of the drilling pad and the pad constructed so as to slope toward a collection and infiltration basin. Construction of the drill site shall be in accordance with the regulations and stipulations as defined by the State of Utah, Department of Natural Resources, Division of Water Rights.

Reclamation of the site will be in accordance with Best Management Practices and requirements of the Bureau of Land Management.

III. EXISTING ACCESS ROADS AND ROAD IMPROVEMENTS

The existing access road is identified and labeled on the project map. Steep, rough topography is not identified as a problem along our access route which was constructed by initially using fill material and covering it with approximately eight (8) inches of shale/gravel. Another layer of road base material, approximately four (4) inches in depth, was placed on top of the shale/gravel.

IV. LOCATION OF EXISTING WELLS

The recently drilled "King Meadow Ranches 17-1" well is situated approximately 200 yards southwesterly of this proposed well site location and is situated in the Southeast Quarter of the Northwest Quarter (SE/NW) of Section 17, Township 23 South, Range 1 West, Sevier County, Utah. "Wolverine Federal 17-2" is located approximately one-half mile southerly of this proposed well site and is situated in the Southeast Quarter of the Southwest Quarter (SE/SW) of Section 17, Township 23 South, Range 1 West, Sevier County, Utah.

V. DRILLING METHOD

Wolverine proposes to use a directional drilling program for the Wolverine Federal #17-4. The mountainous terrain of the area is such that directional drilling is the most efficient method to minimize surface disturbance. By locating the well pad on a relatively flat surface, and drilling a directional well beneath this challenging topography, Wolverine can most effectively minimize surface disturbance and ensure proper utilization of resources.

VI. LOCATION AND TYPE OF WATER SUPPLY

Water for drilling the Wolverine Federal #17-4 will be purchased from water wells nearby or drilled on location and pumped into storage tanks at the site. Water for drilling from nearby well(s) will be hauled to location and stored in storage tanks on the drill site. Wastewater will not be discharged on the surface at this site and the drilling of the well will not require a wastewater management plan.

VII. CONSTRUCTION MATERIALS

In most circumstances, natural earth materials were used for the construction of roads and fills. These were taken from locations essentially contiguous to or nearby the locations to be improved. When necessary, road base materials were used and delivered

by the contractor for application on site and specifically as the initial fill material for the access road, which was then covered with approximately eight (8) inches of shale/gravel.

VIII. METHODS FOR HANDLING WASTE

The Reserve Pit will be dug on the well pad per the attached Well Site Location Layout (Attachment B). It will be used for the disposal of waste mud and drill cuttings and will be located on the south portion of the well site plan. The pit will be 100 feet X 240 feet and will be 10 feet deep. The pit will be lined with a synthetic liner having a minimum thickness of 12 mills and if the reserve pit is built in rock, geotextile or some other material approved by the Division of Oil, Gas and Mining shall be utilized. The Division of Oil, Gas and Mining shall be notified prior to lining the reserve pit in order to allow for Division inspection. Rules pursuant to R649-3-16 will be followed regarding the reserve pit as well as those governing Onshore Oil and Gas Operations (43 CFR 3160.)

Upon evaporation of fluids, pit closure occurs with the back fill of soil and its compaction to prevent settling. The usage of the pit is further described in the section VIII under pit closure.

All garbage will be taken off site and disposed of properly. Pursuant to R649-3-14, all rubbish and debris shall be kept in containers on the well site, and will be hauled to an approved disposal site upon completion of drilling and completion operations and as needed during such operations. There will be no chemical disposal of any type. Sewage is handled through the renting of portable toilets. These are serviced by the rental company and removed from site when no longer required.

IX. PLANS FOR RECLAMATION OF THE SURFACE

<u>Pit closure:</u> The pits will be fenced on three sides during all drilling operations and then the fourth side will be immediately fenced when the rig is moved off location. After evaporation of fluids, back-fill of sub-soil and compaction to prevent settling will occur within 90 days of the drilling and completing of the well. If necessary after 90 days, the fluids will be sucked out of the pit and transported off site.

The topsoil will be stripped off and stock piled in an area not to be disturbed. The topsoil will be placed back on the pit after back filling and then prepped for re-seeding.

The approximate Pit size is indicated on the Well Site Location Layout diagram attached hereto (Attachment B).

<u>Revegetation Methods:</u> Disturbed areas will be disked, seeded and "dragged", as needed; seeding with a mixture approved by the local USDA Natural Resource Conservation Service or the Bureau of Land Management.

Wolverine generally requires at least twelve (12) pounds per acre of seed distribution. Wolverine suggests that autumn seeding practices be used due to the terrain in this project area. Spring rain events are common and tend to cause severe run-off. Fall seeding will allow any moisture, whether rain or snow, to assist the seed into the ground.

Other Practices: Other practices that will be utilized to reclaim disturbed areas will include riprap when and if necessary to prevent erosion and the installation of silt fencing in sensitive and/or erosive areas.

<u>Timetable:</u> Reclamation of the surface will commence as soon thereafter construction, drilling and well completion are concluded, as is practicable, depending on weather. In the event of a dry hole, the drill site and roadways will be restored to their original condition as nearly as practicable within 180 days after plugging date of the well.

X. SURFACE OWNERSHIP

The surface of the proposed well site is privately owned.

XI. WELLSITE LAYOUT

Please see the attached "Well Site Location Layout" (Attachment B) for the well configurations.

XII. PIPELINES AND STREAM CROSSINGS

PIPELINES: In the event of hydrocarbon production requiring transmission by pipeline, the proposed pipeline(s) will be designed, constructed, tested, operated and maintained in accordance with standard safety practices and by a combination of construction techniques intended to minimize to the greatest extent practical the impacts upon natural resources.

Pipelines will typically be installed by trenching. In these trenched areas, the contractor shall strip and stockpile topsoil to be replaced over the backfill portion upon completion of construction operations. Silt fencing will be installed at all stream crossings.

The proposed pipelines will be constructed with a combination of methods intended to minimize impacts to private, state and federally owned property, county roads and natural resources. The pipeline will be constructed by a combination of conventional construction techniques and special measures designed to minimize impacts to natural

resources. Pipelines will be adequately compacted before the topsoil is replaced for reseeding.

In general and where required, soil erosion control measures will consist of appropriate BMPs (Best Management Practices) to reduce the potential for erosion. The BMPs that will be utilized in upland areas include use of construction barriers where appropriate, land clearing, spoil piles, staging and scheduling, seeding and mulching. Note that spoil piles will not typically be seeded since exposure of the spoil piles should be minimal in time. All other proper BMP measures will be implemented to reduce the potential for erosion. Seeding of all raw soils after burial of pipe will be performed. However, mulching will be performed only within state or county road right-of-ways.

Generally speaking, in wetlands, appropriate BMPs will be implemented to minimize the potential for soil erosion within wetland construction zones. These measures shall include, but not be limited to, clearing, barriers, staging, filters, silt fencing, spoil piles, dewatering, seeding, and mulching.

XIII. GENERAL

1000

TIMELINE: The following is a general order of construction and sequence of earth change by which our operations will proceed:

- 1.) Access Road and Well Pad Construction
- 2.) Drilling and Well Completion Operations
- 3.) Initial Well Pad Restoration
- 4.) Clearing of Pipeline Rights-of-way (if needed)
- 5.) Delivery and Layout of Pipe
- 6.) Pipe Welding and Inspection
- 7.) Trenching of Pipe
- 8.) Placement and Burying of Pipe
- 9.) Final Restoration of Site/Access/Pipeline Route
- 10.) Re-Seeding

All hillsides, creek banks, and other places where contractor has moved earth to facilitate operations shall be restored to as near original condition as practical. Replaced

material and/or backfill will be protected from erosion to the satisfaction of Wolverine, the Bureau of Land Management and the Utah Division of Oil, Gas and Mining without undue delay.

Upon completion of any backfill, contractor shall clear pipeline rights-of-way and access routes of large rocks, stumps and other debris; fill holes, ruts and depressions, and shall keep the access road in a neat and acceptable condition. All cleanup shall be maintained by the contractor until final acceptance by Wolverine and the enforcing agency.

XIV. ENVIRONMENTAL IMPACT ASSESSMENT:

It is anticipated that the drilling and operations planned, provided the success of this well, will not have any adverse affects to any wildlife or aquatic life in the area. There will be only a minor effect on the surface cover. Drilling and production operations should have minimal effect on the population patterns, land use, public utilities or public services in the near future for this rural area.

Noise levels during drilling and completion operations may be continuous but not unusually high. If production is achieved, noise levels should be minimal during the operation and maintenance of the wells.

Necessary soil erosion and sedimentation safeguards will be built into the well pad, access and future proposed pipeline routes to protect any nearby lowlands, where appropriate. Particular care will be exercised in order that all drain ditches be maintained and kept unobstructed to prevent water backup against spoil banks or backfill, causing erosion. The cumulative long-term effect on the immediate environment should be minimal.

If the well is productive, the effect on the air quality in the area is expected to be practically non-existent. Human activity in this area is somewhat limited, due to the nature of the location. Ranching operations and any activities in the area should not be adversely affected.

The site will then be contoured as closely as practical to its natural state, fine graded and stabilized. The well site and access route will be restored as soon as practical. If a well is productive, existing dikes will be maintained and erosion control procedures, as specified and required by the Bureau of Land Management, will be followed to insure protection of the local ecosystem.

Cultural

Please see, "Attachment E", Cultural Resource of A Well Pad (A-2) Near Sigurd, Sevier County, Utah.

Wildlife

Please see "Attachment D", a summary of Wildlife and Vegetative Species of Concern.

XV. SUMMARY:

In conclusion, the environmental impact of this project is considered to be minimal and every effort will be made to ensure the protection and preservation of the environment, as well as the standard of living for those affected by its operation.

This proposed project is aimed at increasing the hydrocarbon reserves within the State of Utah. In addition, in the event that production can be established in this project, it will be of financial benefit to the private holders of oil and gas rights within the "Wolverine Federal Exploration Unit", including the Bureau of Land Management in fulfillment of its stewardship responsibilities over federally owned oil and gas assets. We consider the environmental impact of this project to be slight and we will make every effort to be conscientious operators and to insure protection and preservation of the environment during the course of our drilling and producing operations.

Sincerely,

/ Vhi

Shawn Burd

Authorized Permitting Agent:

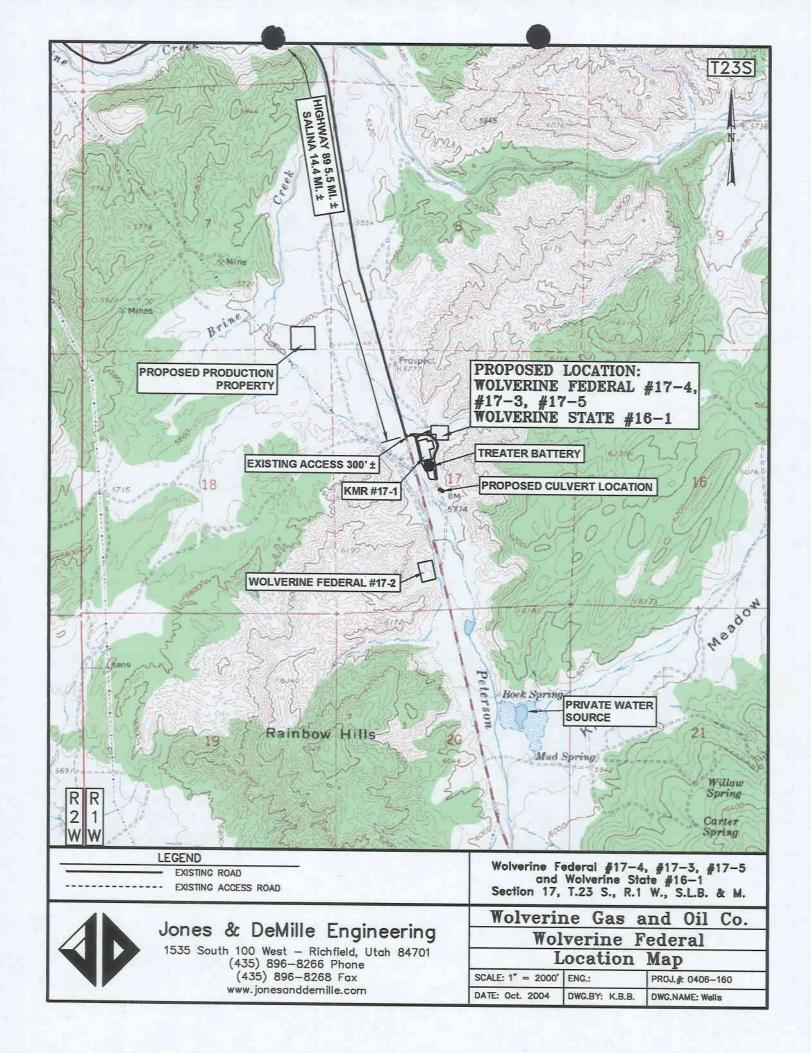
Western Land Services – Western Division 54 West Seymour Street Sheridan, WY 82801 Donald L. Anderson, Chief Operating Officer

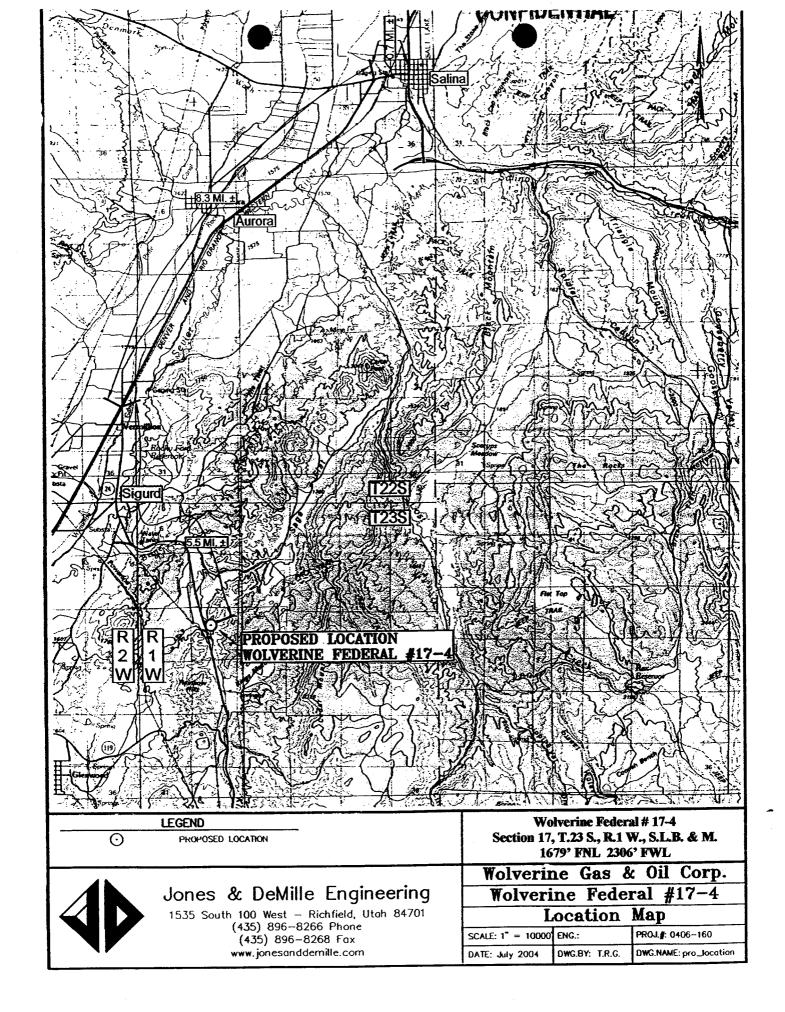
Wolverine Gas and Oil Company of Utah, LLC

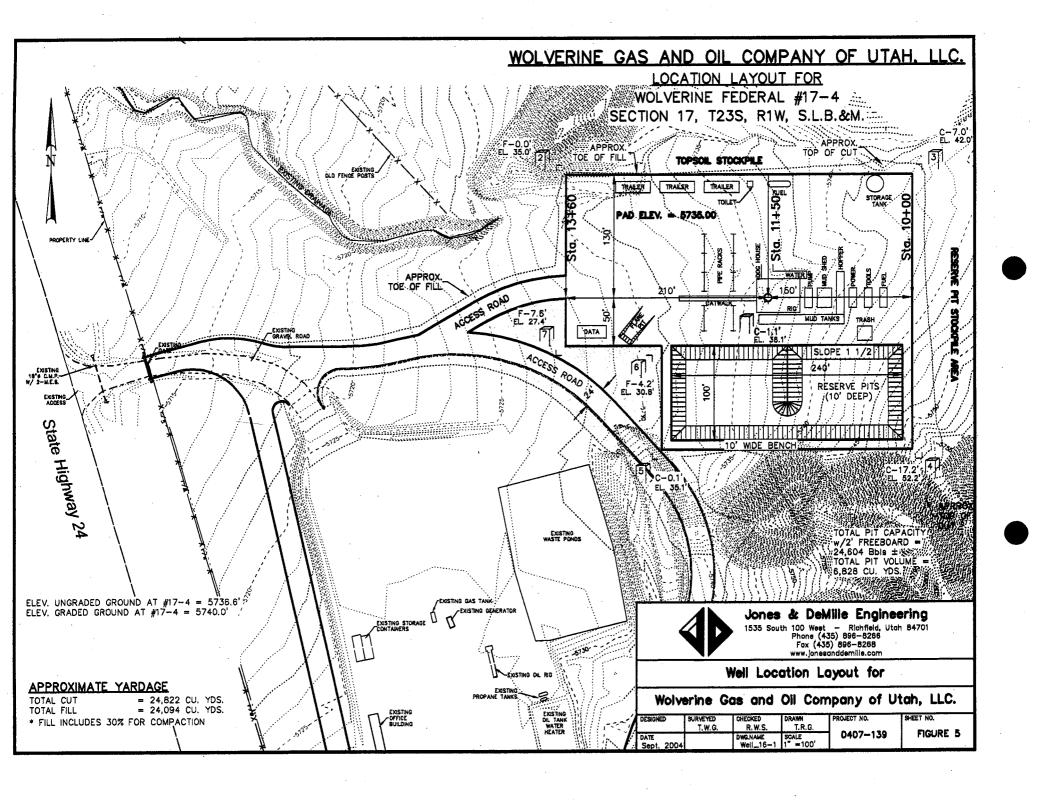
Phone: 307-673-1817

Local Contact: Shawn Burd

Phone: 435-896-1943

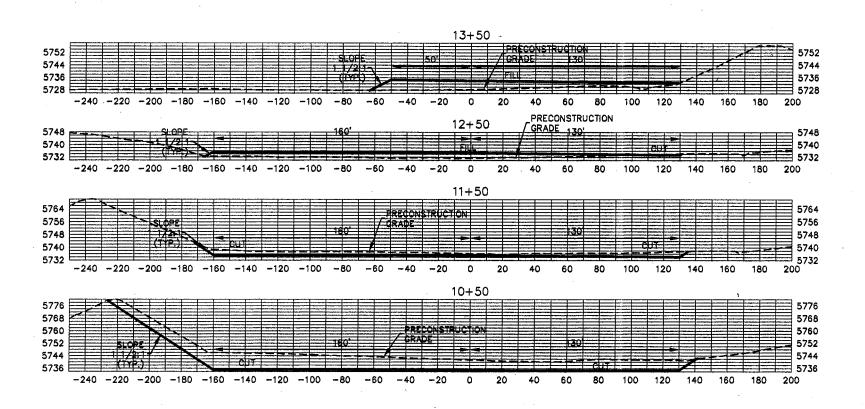






WOLVERINE GAS & OIL COMPANY OF UTAH, LLC.

TYPICAL CROSS SECTIONS FOR WOLVERINE FEDERAL #17-4
SECTION 17, T23S, R1W, S.L.B.&M.





Jones & DeMille Engineering

1535 South 100 West — Richffield, Utah 84701 Phone (435) 996-8286 Fox (435) 896-8268 www.jonesanddemilla.com

Typical Cross Sections for

Wolverine Gas & Oil Company of Utah, LLC.

I	DESIGNED	SURVEYED T. W. G.	CHECKED R.W.S.	DRAWN T.R.G,		SHEET NO.
	DATE Sept. 2004		DWG.NAME Design	SCALE 1" =60'	0407-139	FIGURE 5A

Wolverine Federal #17-4

The Wolverine Federal #17-4 well site is located approximately 3.5 miles southeast of the town of Sigurd in Township 23 South - Range 1 West, Section 17: Northwest Quarter of the Southeast Quarter (NW/SE) Salt Lake Base and Meridian in Sevier County, Utah.

The proposed Wolverine Federal #17-4 is situated adjacent to Highway 24 in a gentle rolling plains with hilly terrain on the east side. Plant habitat types within the area consist of a combination of Pinyon Pine—Juniper, located on the hillsides, and sagebrush—grass communities in the less gradient areas.

THE PROPOSED ACTIONS

The proposed depth is 6,950 feet for the Wolverine Federal #17-4 well. The well pad dimensions will be approximately 360 feet by 280 feet. The access road was constructed by initially using fill material and covering it with approximately 8 inches of shale/gravel. Another layer of road base material, approximately 4 inches in depth, will be placed on top of the shale/gravel.

WILDLIFE AND VEGETATIVE SPECIES OF CONCERN

Potential effects concerning federally endangered, threatened, proposed, candidate, sensitive, and management indicator wildlife and vegetative species has been evaluated in the proposed area of disturbance before any surface disturbing activities have occurred. It is understood that these activities and the proposed location will be monitored by a BLM staff or approved biologist. A habitat analysis has been completed to evaluate which species may occur in the area. Surface use guidelines will be followed as will surface use restrictions and time limit stipulations in the area of concern for all affected species. There is the possibility that small clumps of Penstemon plants may be located within this project area. Wolverine Gas and Oil Company of Utah, LLC will take all necessary steps to protect the species of concern and as stipulated by the Bureau of Land Management.

Cultural Resource Inventory of A Well Pad (A-2) Near Sigurd, Sevier County, Utah



Jason Bright
Mountain States Archaeology, LLC
7190 South State Street
Midvale, Utah 84047

Project Number U-04-MV-0646p BLM Permit UT0480011

Cultural Resources Report UT0421

July 13, 2004

Cultural Resource Inventory of A Well Pad (A-2) Near Sigurd, Sevier County, Utah ENTIAL

Project Description

In July 2004, Western Land Services contracted Mountain States Archaeology to perform Class III cultural resource inventory of a small well pad and access route in Sevier County, Utah on behalf of Wolverine Oil and Gas.

The well pad and access route are located in Township 23 South Range 1 West, NW ¼ of SE ¼ of NW ¼ of Section 17 (Figure 1). A records search was performed for this area on March 2, 2004 at Utah SHPO. Craig Harmon at the Richfield BLM office forwarded records search information for a nearby project (Bright 2004a) on March 26th, 2004. Fieldwork was completed July 12th 2004.

Records Search

A number of previously completed projects were found within a mile of the current project locations. These include U-89-BL-0464 (the Sigurd/Kings Meadow Power Line), U-91-BL-0409 (Telephone Reroute), U-93-BL-0184 (Sage Flat Landfill), U-94-BL-0078 (Sage Flat Landfill Road), U-97-SC-0217 (Chevron Seismic Prospect) and U-99-BL-0488 (Salina Exchange).

In addition to these projects, MSA has completed or is currently involved with a number of other nearby projects. These include U-04-MV-0262 (Wellpad 17-2) located just southwest and across Highway 24 of the current or project, U-04-MV0395b, a pipeline from Wellpad 17-2 to Sigurd, U-04-MV-0647, another well pad located immediately north and east of A-2 (Figure 1) and U-04-MV-0106, a series of 8 seismic lines, one of which runs to the south of the current project location.

The seismic line survey documented two sites within a mile of the current project. Site 42SV2667 and 42SV2668 are small historic sites consisting of fence posts (e.g corrals) and trash scatters located west (42SV2667) and south (42SV2668) of the current project location. Neither site will be impacted by proposed activities.

Methods

The well pad location was plotted by MSA with coordinates provided by the client. The well pad itself is 360 feet by 180 feet, and was inventoried by one archaeologist walking 15-meter transects.

Environment

The project location is located just east of Highway 24, south of Sigurd, Utah. Ground visibility was good within the well pad. The general area has already been developed. Vegetation is composed sagebrush with various bunch grasses and forbs. Sediments are a light brown sand and silt.

Results

No cultural resources were located within the well pad or access route. This includes archaeological sites and isolated finds.

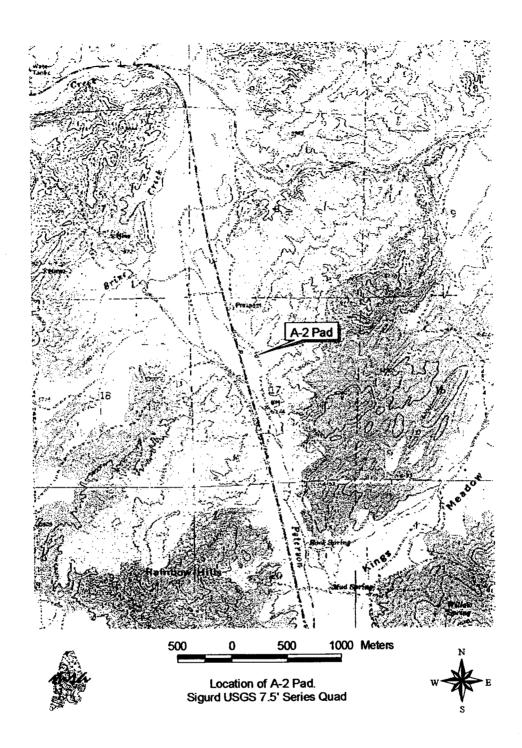


Figure 1. Location of A-2 well pad

WOLVERINE GAS AND OIL COMPANY OF UTAH, LLC

DRILLING PROGNOSIS

Wolverine Federal #17-4 NW SE SEC 17-T23S-R1W SEVIER CO., UTAH

BRIEF DRILLING PLAN

Due to surface topography constraints, directionally drill a 6950' MD (6550'TVD) test of the Navajo 1 formation on a day work contract basis from Wolverine's present work area known as Drill Pad A-2 located in Sec 17 T23S – R01W, Sevier Co, UT. Please refer to the directional drilling plan attached for detailed hole angle, trajectory and target information. Deviation is the primary drilling concern in this area. No abnormal pressure or hydrogen sulfide gas is expected, however, an H2S detector will be utilized. The projected surface and bottomhole locations are to be as follows:

Surface Location: 1679' fnl & 2306' fwl of Sec 17 T23N – R01W BHL @ top of NVJO1 (5700' TVD) 1980' fsl & 1980' fel of Sec 17 T23N – R01W

14" conductor casing will be cemented to surface at approximately 80 ft BGL. 9-5/8" surface casing will be set & cemented to surface in a 12-1/4" hole deviated to approximately 10 deg at +/-1506' (+/-1500' TVD). An 8-3/4" hole will then be drilled to +/-6950' (6550' TVD). 5-1/2" production casing will then be set & cemented to 500' into the surface casing.

EMERGENCY NUMBERS

Sevier Valley Medical Center	(435)-896-8271
Medical Helicopter	(800)-453-0120
Sheriff Department	(435)-896-2600
Fire Department-Richfield, UT	(435)-896-5479
Bureau of Land Management (Richfield):	(435)-896-1500
Bureau of Land Management (Salt Lake City)	(801) 539-4045
Utah Division of Oil, Gas and Mining (Salt Lake City):	(801)-538-5340

Utah Division of Oil, Gas and Mining

Contact Carol Daniels (801) 538-5284, 24 hrs prior to spudding

GENERAL INFORMATION

OBJECTIVE: Navajo 1 @ 5700' (TVD)

ELEVATION: 5740' GL (est)

PROJECTED TOTAL DEPTH:

6,950 MD; 6550' TVD

SURFACE LOCATION:

1679' FNL & 2306' FWL

Section 17-23S-1W

COUNTY:

Sevier

STATE: Utah

DIRECTIONS TO LOCATION:

From town of Sigurd, Utah go south approximately

3.5 miles on Hwy #24 to location on the left side of

the road.

PROPOSED CASING PROGRAM:

Hole Size	Casing Size	Wt./Ft.	Grade	Joint	Measured Depth Set
	14"				80°
12¼"	9-5/8"	36#	J-55	STC	0'-1,510'
8-3/4"	5½"	17#	L-80	LTC	0'-6,950'

Hole Size	Casing Size	Drift ID, in.	OD of Couplings	Annular Volume in OH, cf/ft	Annular Volume in Csg, cf/ft	Capacity of casing, cf/ft
	14"					
12¼"	9-5/8"	8.379	10.625	0.3127	0.4659	0.4340
8-3/4"	5½"	4.767	6.050	0,2526	0.2691	0.1305

GEOLOGIC INFORMATION:

Formation	Interval (TVD)	Interval (MD)	Lithology	Prod	Abnormal Psi
Arapien	Surf – 5404'	Surf – 5747'	sh, siltstone,salt,evaporites		
TwinCreek1	5404'- 5700'	5747' -6062'	Carbonates		
Navajo 1	5700- 6350'	6062' -6742'	Sandstone w/ minor shale	X	
Total Depth	6550'	6950°	Sandstone w/ minor shale		

CONSTRUCTION OF SURFACE LOCATION

360'x 180' Pad 250'x 100' x 10' Reserve Pit with a 12 mil synthetic liner 72" diameter tin horn cellar, 4' to 5' deep. Flare pit a minimum of 100' from wellhead.

SURFACE HOLE: 0' to 1510'

Directionally drill a 12-1/4" hole with a TCI rock bit, mud motor & MWD equipment to approximately 1510' using fresh water and gel/lime sweeps when necessary (make hole to fit 9-5/8" casing). Loss circulation is not expected to be a problem in this interval. If losses do occur, begin pumping LCM sweeps. If loss circulation cannot be healed with ±25 ppb LCM, consider dry drilling (no returns). Run survey at every 200' and at TD or as needed to insure bottom hole location.

PRESSURE CONTROL & SAFETY EQUIPMENT FOR SURFACE HOLE

Bottom to Top

14" x 13-5/8" 3M weld on flange
13-5/8" 3M x 13-5/8" 3M spacer spool w/ 3" outlets & valves.
13-5/8" 3M Annular preventer, connected to accumulator with enough capacity to close annular and retain 200 psi above pre-charge pressure
13-5/8" Drilling Nipple with fill up and circulating line.
Upper kelly cock valves with handles available

Test Annular to 1500 psi. Test all valves and lines.

MUD PROGRAM FOR SURFACE HOLE

DEPTH	MUD WEIGHT	ТҮРЕ	VISC	PH	FLUID LOSS
0 -1510'	8.4 – 8.9	FW/Gel/Lime	26-45	7-9	N/C

Note: Sweep hole every 100 - 200 feet or as needed for hole cleaning. Control the pH with Lime & Caustic to aid in gel flocculation for better carrying capacity.

CASING PROGRAM FOR SURFACE HOLE

DEPTH	SIZE	LENGTH	WT	GRADE	THREAD	REMARKS
0 - 1510'	9 5/8"	1510'	36#	J-55	ST&C	

Casing Running Sequence:

Texas pattern notched guide shoe, 1 jt of 9 5/8" 36# J-55 ST&C

Float collar

Balance of 9-5/8" 36# J-55 ST&C

10 - centralizers equally spaced.

RU cement co., hold safety meeting, test lines, cement 9-5/8" casing per cement company recommendation. Displace with fresh water or mud if used. *Do not overdisplace cement*.

CEMENTING PROGRAM FOR SURFACE HOLE

Lead:

360 sx 35:65 Poz: Class C or type 5 6% Bentonite	Mixed at: Yield:	12.8 ppg 1.78 ft ³ /sx
1% Calcium Chloride	Water:	9.42 gal/sx
0.25 lb/sx Cello Flake		O

Tail:

280 sx Class G	Mixed at:	15.6 ppg
2% Calcium Chloride	Yield:	$1.20 \text{ft}^3/\text{sx}$
.25 lb/sx Cello Flake	Water:	5.25 gal/sx

MUST CIRCULATE CEMENT TO SURFACE per BLM requirements. If the cement does not circulate to surface contact the BLM office at (435) 896-1500. They will require either a temperature survey or a cement bond log to be run, then determine what remedial action will be taken before drilling out.

WOC A TOTAL OF 24 HOURS:

Wait 4 hours with the hydrostatic pressure of the displacement fluid in place, then cut off conductor and weld on an 11" 3M x 9-5/8" SOW casing head. NU BOPE and choke manifold.

PRESSURE CONTROL AND SAFETY EQUIPMENT FOR PRODUCTION STRING

Bottom to Top

11" 3M x 9-5/8" csg head.

11" 3M x 11" 3M spacer spool

11" 3M Double Ram Preventer w/ 4-1/2" Pipe ram on top and blind ram on bottom. Two side outlets, choke side will have two 3" x 3M gate valves. Kill side will have two 2-1/16 x 3M gate valves and one 2" x 3M check valve. Connect BOP to choke manifold with pressure guage.

11" 3M Annular preventer.

11" 3M short rotating head with fill-up line

Upper kelly cock valves with handles available Safety valves and subs to fit all drill string connections in use Inside BOP or float sub available

Testing Procedure:

Annular Preventer

The annular preventer will be pressure tested to 1500 psi for a period of ten minutes or until provisions of the test are met, whichever is longer. At a minimum, the pressure test will be performed:

- 1) When the annular is initially installed
- 2) Whenever any seal subject to test pressure is broken
- 3) Following related repairs and at 30 day intervals

The annular preventer will be functionally operated once per week.

Blowout Preventer

The BOP, choke manifold and related equipment will be pressure tested to 2500 psi, 70% of the internal yield of the casing. Pressure will be maintained for a period of at least ten minutes or until the requirements of the test are met, whichever is longer. At a minimum the pressure test will be performed:

- 1) When the BOP is initially installed
- 2) Whenever any seal subject to test pressure is broken
- 3) Following related repairs and at 30 day intervals

The pipe and blind rams will be activated each trip, but not more than once each day. All BOP drills will be recorded in the IADC driller's log.

Accumulator:

The accumulator will have sufficient capacity to open the hydraulically controlled gate valve (if so equipped), close all rams plus the annular preventer, and retain a minimum of 200 psig above pre-charge on the closing manifold without the use of the closing unit pumps. The reservoir capacity will be double the accumulator capacity, and the fluid level will be maintained at the manufacturer's recommendations. The accumulator shall have 2 independent power sources to close the preventers. Nitrogen bottles may be one of the independent power sources and, if so, shall maintain a charge equal to the manufacturer's specifications.

The accumulator pre-charge pressure test will be conducted prior to connecting the closing unit to the BOP stack and at least once every six months thereafter. The accumulator pressure will be corrected if the measured pre-charge pressure is found to be above or below the maximum or minimum limits specified in Onshore Oil & Gas Order Number 2 (only nitrogen gas may be used to pre-charge).

Choke Manifold Equipment, Valves and Remote Controls

All choke lines will be straight lines unless turns use tee blocks or are targeted with running tees, and will be anchored to prevent whip and vibration

A valve will be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve will be maintained in the open position and will be closed only when the power source for the accumulator is inoperative.

Remote controls shall be readily accessible to the driller. Remote controls will be capable of both opening and closing all preventers. Master controls will be at the accumulator and will be capable of opening and closing all preventers and the choke line valve (if so equipped).

The choke manifold and BOP extension rods with hand wheels will be located outside the rig sub structure. The hydraulic BOP closing unit will be located at least twenty-five feet from the well head but readily accessible to the driller. Exact locations and configurations of the hydraulic BOP closing unit will depend upon the particular rig contracted to drill this well.

A flare line will be installed after the choke manifold, extending 125 feet from the center of the drill hole to a separate flare pit.

PRODUCTION HOLE: 1,510' TO 6,950'

Trip in the hole with an 8 3/4" insert bit, mud motor & MWD. Drill float, shoe and 20' of new hole. Perform an integrity test to 820 psi (10.5 ppg mud wt equivalent). Drill with a salt saturated mud to the top of the Twin Creek formation.

MUD PROGRAM FOR PRODUCTION HOLE

DEPTH	MUD WEIGH	IT TYPE	VISC	pH F	LUID LOSS
1510' – 6000' 6000' - 6950'	2.0	Saturated Salt Saturated Salt	34-45 36-45		20cc or Less 12cc or Less

Add bulk salt to increase weight to 9.8 ppg. Maintain the pH at 9.0 to 10.0 using lime and caustic. Walk viscosity up to 34 cp. Start bringing fluid loss up to 20 cc. If loss circulation becomes a problem use LCM sweeps to control seepage & clean hole.

EVALUATION PROGRAM FOR PRODUCTION HOLE

At TD, circulate and condition hole clean for logs. Short trip to the last bit trip depth monitoring well closely for flow. TOH for logs.

Mudlogger: From surface casing to total depth.

Electric Logs:

Tool	Surf csg to TD
Dipole Sonic w/ GR	Yes
Dual laterolog and microlog w/ GR & Caliper	Yes, GR to surf
LithoDensity/Neutron w/ GR & Caliper	Yes
Micro Imaging Dipmeter	Yes

DST: To be decided Cores: To be decided

CASING PROGRAM FOR PRODUCTION HOLE

DEPTH	SIZE	LENGTH	WT	GRADE	THREAD	REMARKS
0' - TD'	5 1/2	6950'	17.0#	L-80	LT&C	

Rig up casing tools and run 5 ½" production casing as follows:

Float shoe

2 joint of 5 1/2" 17.0# L-80 LT&C casing

Float collar

28 Centralizers, middle shoe joint and one every other joint to 5000'.

Run balance of 5 1/2" 17.0# L-80.

CEMENT PROGRAM FOR PRODUCTION CASING

Lead:

750 sx (50:50) Poz: Premium Weight: 13.0 ppg 3 % Bentonite Yield: 1.76 ft³/sx

0.4% Halad R-567 (Low Fluid Loss Control) Water: 8.44

gal/sx 15 % Salt

5 lbm/sk Gilsonite

0.3% D-AIR 3000 (Defoamer)

0.25 lb/sx Flocele

Tail:

350 sx (50:50) Poz: Premium Weight: 13.4 ppg 2 % Bentonite Yield: 1.49 ft³/sx 0.2% Halad R-322 (Low Fluid Loss Control) Water: 7.09

gal/sx

3 % KCLSalt

3 lbm/sk Silicate Compacted (light Weight Additive)

1 lbm/sk Granulite TR 1/4 (Lost Circulation Additive)

0.2% WG-17 (Suspension Agent)

0.25 lb/sx Flocele

TOC at $\pm 1,000$ ft

Calculate cement volume based on log caliper +/- 20%. Displace cement w/water. Set slips, ND BOP's, cut off, NU & test wellhead. Clean pits and release rig.

SCHEDULE

Location preparation is presently scheduled to begin on or about October 15, 2004 Drilling operations are anticipated to begin on or about December 1, 2004

end

Wolverine Gas & Oil Co of Utah, LLC eatherford Azimuths to True North TMagnetic North: 12.95° Pad A-2 T23S R01W Sevier County, Utah Magnetic Field Strength: 52133nT Dip Angle: 64.57° Date: 7/6/2004 Model: igrf2000 NW/4 SE/4 Sec 17 17-4 SFC Location 1679' FN & 2306' FW Sec 17 SECTION DETAILS Sec MD Inc Azi TVD +N/-S +E/-W DLeg TFace VSec Target 0.0 0.00 0.00 0.0 0.0 0.0 0.00 0.00 0.0 2 300.0 0.00 148.48 300.0 0.0 148.48 0.0 0.00 0.0 54.9 127.4 1506.1 10.00 148.48 1500.0 -89.5 105.0 0.83 148 48 1979.4 24.20 148.48 1951.2 -207.8 3.00 0.00 243.8 5773.0 24.20 148.48 5411.5 -1533.4 940.3 0.00 0.00 1798.8 994.0 6079.6 15.00 148.48 5700.0 -1621.0 3.00 180.00 1901.5 NVJ01 1980' FS & 1980' FE 6959.6 15.00 148.48 6550.0 -1815.2 1113.1 0.00 0.00 2129.3 TARGET DETAILS 0-Name TVD +N/-S+E/-WShape NVJ01 1980' FS & 1980' FE 5700.0 -1621.0 994.0 Rectangle (400x400) 16* CASING DETAILS No. TVD MD Name Size 0.08 80.0 20" 20.000 600.0 600.1 16" 2 3 4 5 16.000 2500.0 13 3/8" 2581.1 13.375 5500.0 5869.0 9 5/8" 6959.6 6550.0 5 1/2" 2000 FORMATION TOP DETAILS No. TVDPath MDPath Formation 13 3/8" 5404.0 5764.8 Twin Creek True Vertical Depth [1000fb/in] 500 South(-)/North(+) [1000fb/in] 4000 -1000 5000 -2000 6000 West(-)/East(+) [1000ft/in]

5 1/2"

3000

Created By: Steve Schmitz, P.E.

1000

Vertical Section at 148.48° [1000ft/in]

Watherford Directional Services

Planning Report Wolverine Gas & Oil Co of Utah Date: 10/20/2004 Time: 09:17:38 Page: 1 Field: Sevier County, Utah Co-ordinate(NE) Reference: Well: 17-4, True North Pad A-2 Site: Vertical (TVD) Reference: **SITE 0.0** Well-17-4 Section (VS) Reference: Well (0.00N,0.00E,148.48Azi) Wellpath: 1 Plan-17.4 Field: Sevier County, Utah Map System: US State Plane Coordinate System 1927 Map Zone: Utah, Central Zone Geo Datum: NAD27 (Clarke 1866) Coordinate System: Well Centre Sys Datum: Mean Sea Level Geomagnetic Model: igrf2000 Site: Pad A-2 T23S R01W Sevier County, Utah NW/4 SE/4 Sec 17 Site Position: Northing: Latitude: From: Lease Line Easting: Longitude: Position Uncertainty: 0.0 ft North Reference: True **Ground Level:** 0.0 ft Grid Convergence: -0.28 deg Wall-17-4 Slot Name: 1679' FN & 2306' FW of Sec 17 Well Position: +N/-S0.0 ft Northing: 172191.29 ft Latitude: 38 48 18.900 N +F/_W 0.0 ft Easting: 1876352.49 ft 111 56 Longitude: 1.824 W Position Uncertainty: 0.0 ft Wellpath: **Drilled From:** Surface Tie-on Depth: 0.0 ft **Current Datum:** SITE Height 0.0 ft Mean Sea Level Above System Datum: Magnetic Data: 7/6/2004 Declination: 12.95 deg Field Strength: 52133 nT 64.57 deg Mag Dip Angle: Vertical Section: Depth From (TVD) +N/-S +E/-W Direction ft ft ft deg 0.0 0.0 0.0 148.48 Plan: 17-4 Date Composed: 7/6/2004 Version: Principal: Yes Tied-to: From Surface 1 : Start Hold Section MD Incl Azim TVD +N/-S +E/-W VS DLS Build Turn TFO ft deg deg ft ft ff ft deg/100ft deg/100ft deg/100ft deg 0.00 0.0 0.00 0.0 0.0 0.0 0.0 0.00 0.00 0.000.00 0.08 0.00 0.00 80.0 0.0 0.0 0.0 0.00 0.00 0.00 0.00 100.0 0.00 148.48 100.0 0.0 0.0 0.0 0.00 0.00 0.00 148.48 200.0 0.00 148.48 200.0 0.0 0.0 0.0 0.00 0.00 0.00 148.48 300.0 0.00 148.48 300.0 0,0 0.0 0.0 0.00 0.00 0.00 148.48 Section 2: Start Build 0.83 MD TVD Azim +N/-S +E/-W VS DLS Build Turn TFO ft deg deg ft ft ft deg/100ft deg/100ft deg/100ft deg 400.0 0.83 148.48 400.0 -0.6 0.4 07 0.83 0.83 0.00 0.00 500.0 148.48 1.66 500.0 -2.5 1.5 29 0.83 0.83 0.00 0.00 600.0 148.48 2.49 599 9 -5.6 3.4 6.5 0.83 0.83 0.00 0.00 600.1 148.48 2.49 600.0 -5.6 3.4 6.5 0.00 0.00 0.00 0.00

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-15.4

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-30.2

-39.4

-49.9

-61.6

-74.5

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54.9

Watherford Directional Services **Planning Report**

Company Field: Site: Well: Wellpath:	Sevier Pad A 17-4	Count	as & Oil Co y, Utah	o of Utah		Co Vo Se	te: 10/20/ ordinate(N) rtical (TVD) ction (VS) R an:	E) Reference: Reference:	SITE O.C	-4, True Noi		Page:	2
Section	3 : Sta	rt Build	3.00										
MD ft	Inc de		Azim deg	TVD ft	+N/-S ft	+E/-W	VS ft	DLS deg/100ft	Build dea/100ff	Turn deg/100ft	TFO deg		
1600.0	12.8	B2	148.48	1592.0	-105.3	64.6	123.6	3.00	3.00	0.00	0.00		<u> </u>
1700.0			148.48	1688.9	-126.4	77.5	148.3	3.00	3.00	0.00	0.00		
1800.0			148.48	1784.4	-151.8	93.1	178.0	3.00	3.00	0.00	0.00		
1900.0			148.48	1878.1	-181.4	111.2	212.8	3.00	3.00	0.00	0.00		
1979.4			148.48	1951.2	-207.8	127.4	243.8	3.00	3.00	0.00	0.03		***
Section	4 : Sta		7 - P.O. P. S. T.	.	* 1878 * 1878 * 1800 * 1800		,,		·				
MD ft	Inc de		Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS dea/100ft	Build dea/100ff	Turn deg/100ft	TFO deg		
2000.0	تتنست	The water	148.48	1970.0	-215.0	<u> </u>	252.2		187 B. S. L. 1886				
2100.0			148.48	2061.2	-215.0 -250.0	131.9 153.3	292.2 293.2	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00		
2200.0			148.48	2152.4	-284.9	174.7	334.2	0.00	0.00	0.00	0.00		
2300.0			148.48	2243.6	-319.9	196.1	375.2	0.00	0.00	0.00	0.00		
2400.0			148.48	2334.9	-354.8	217.6	416.2	0.00	0.00	0.00	0.00		
2500.0			148.48	2426.1	-389.7	239.0	457.2	0.00	0.00	0.00	0.00		
2581.1	24.2		148.48	2500.0	-418.1	256.4	490.4	0.00	0.00	0.00	0.00		
2600.0			148.48	2517.3	-424.7	260.4	498.2	0.00	0.00	0.00	0.00		
2700.0 2800.0			148.48	2608.5	-459.6	281.8	539.2	0.00	0.00	0.00	0.00		
2900.0			148.48 148.48	2699.7 2790.9	-494.6 -529.5	303.3	580.1	0.00	0.00	0.00	0.00		
3000.0			148.48	2882.1	-529.5 -564.5	324.7 346.1	621.1 662.1	0.00	0.00	0.00	0.00		
3100.0			148.48	2973.3	-599.4	367.6	703.1	0.00 0.00	0.00 0.00	0.00 0.00	0.00		
3200.0			148.48	3064.6	-634.3	389.0	744.1	0.00	0.00	0.00	0.00 00.0		
3300.0			148.48	3155.8	-669.3	410.4	785.1	0.00	0.00	0.00	0.00		
3400.0	24.2	20	148.48	3247.0	-704.2	431.8	826.1	0.00	0.00	0.00	0.00		
3500.0			148.48	3338.2	-739.2	453.3	867.1	0.00	0.00	0.00	0.00		
3600.0			148.48	3429.4	-774.1	474.7	908.1	0.00	0.00	0.00	0.00		
3700.0			148.48	3520.6	-809.1	496.1	949.1	0.00	0.00	0.00	0.00		
3800.0 3900.0			148.48	3611.8	-844.0	517.5	990.0	0.00	0.00	0.00	0.00		
4000.0			148.48 148.48	3703.1 3794.3	-878.9 -913.9	539.0 560.4	1031.0	0.00	0.00	0.00	0.00		
4100.0			148.48	3885.5	-913.9 -948.8	581.8	1072.0 1113.0	0.00 0.00	0.00 0.00	0.00	0.00		
4200.0			148.48	3976.7	-983.8	603.3	1154.0	0.00	0.00	0.00 0.00	0.00 0.00		
4300.0			148.48	4067.9	-1018.7	624.7	1195.0	0.00	0.00	0.00	0.00		
4400.0		20	148.48	4159.1	-1053.7	646.1	1236.0	0.00	0.00	0.00	0.00		
4500.0			148.48	4250.3	-1088.6	667.5	1277.0	0.00	0.00	0.00	0.00		
4600.0			148.48	4341.5	-1123.5	689.0	1318.0	0.00	0.00	0.00	0.00		
4700.0			148.48	4432.8	-1158.5	710.4	1358.9	0.00	0.00	0.00	0.00		
4800.0 4900.0			148.48	4524.0	-1193.4	731.8	1399.9	0.00	0.00	0.00	0.00		
4900.0 5000.0			148.48 148.48	4615.2 4706.4	-1228.4	753.2	1440.9	0.00	0.00	0.00	0.00		
5100.0			148.48	4706.4 4797.6	-1263.3 -1298.3	774.7 706 1	1481.9	0.00	0.00	0.00	0.00		
5200.0			148.48	4888.8	-1290.3 -1333.2	796.1 817.5	1522.9 1563.9	0.00 0.00	0.00 0.00	0.00	0.00		
5300.0			148.48	4980.0	-1333.2 -1368.1	838.9	1604.9	0.00	0.00	0.00 0.00	0.00 0.00		
5400.0			148.48	5071.3	-1403.1	860.4	1645.9	0.00	0.00	0.00	0.00		
5500.0			148.48	5162.5	-1438.0	881.8	1686.9	0.00	0.00	0.00	0.00		
5600.0	24.2	20	148.48	5253.7	-1473.0	903.2	1727.8	0.00	0.00	0.00	0.00		
5700.0			148.48	5344.9	-1507.9	924.7	1768.8	0.00	0.00	0.00	0.00		
5764.8			148.48	5404.0	-1530.6	938.5	1795.4	0.00	0.00	0.00	0.00		
5773.0			148.48	5411.5	-1533.4	940.3	1798.8	0.00	0.00	0.00	0.00		
Section	5 : Sta	Color of	The state of the s	700 Ta	70 - 144 2 70	Harry was also				VV <u>, 0,000,777</u> = 1			
MD ft	Inc de	9	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg		
5800.0			148.48	5436.2	-1542.7	946.0	1809.7	3.00	-3.00	0.00	180.00		
5869.0			148.48	5500.0	-1565.1	959.7	1835.9	3.00	-3.00	0.00	180.00		
5900.0			148.48	5529.0	-1574.5	965.5	1846.9	3.00	-3.00	0.00	-180.00		
6000.0			148.48	5623.6	-1602.1	982.4	1879.3	3.00	-3.00	0.00	180.00		
6079.6	15.0	UO OU	148.48	5700.0	-1621.0	994.0	1901.5	3.00	-3.00	0.00	180,00		

Plan:

Company: Wolverine Gas & Oil Co of Utah

Sevier County, Utah Pad A-2 Field:

Site: Well: 17-4 Wellpath: 1

Date: 10/20/2004 Time: 09:17:38 Co-ordinate(NE) Reference: Well: 17-4, True North Vertical (TVD) Reference: SITE 0.0

Well (0.00N,0.00E,148.48Azi)

Page:

Section (VS) Reference: 17-4

Section	6:	Start	Hold
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MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
6100.0	15.00	148.48	5719.7	-1625.5	996.8	1906.8	0.00	0.00	0.00	0.00
6200.0	15.00	148.48	5816.3	-1647.6	1010.3	1932.7	0.00	0.00	0.00	0.00
6300.0	15.00	148.48	5912.9	-1669.6	1023.8	1958.5	0.00	0.00	0.00	0.00
6400.0	15.00	148.48	6009.5	-1691.7	1037.3	1984.4	0.00	0.00	0.00	0.00
6500.0	15.00	148.48	6106.1	-1713.8	1050.9	2010.3	0.00	0.00	0.00	0.00
6600.0	15.00	148.48	6202.7	-1735.8	1064.4	2036.2	0.00	0.00	0.00	0.00
6700.0	15.00	148.48	6299.3	-1757.9	1077.9	2062.1	0.00	0.00	0.00	0.00
6800.0	15.00	148.48	6395.9	-1780.0	1091.5	2087.9	0.00	0.00	0.00	0.00
6900.0	15.00	148.48	6492.5	-1802.0	1105.0	2113.8	0.00	0.00	0.00	0.00
6959.6	15.00	148.48	6550.0	-1815.2	1113.1	2129.3	0.00	0.00	0.00	0.00

Targets

Name Description Dip. Dir	r. ft	+NV-S ft	+E/-W ft	Map Map Northing Easting ft ft	< Deg		titude ı Sec		Longitud Min Se	24 T 1 T 1 T 1 T 1 T 1
NVJ01 1980' FS & 1980' FE -Rectangle (400x400) -Plan hit target	5700.0	-1621.0	994.0	170565.491877338.61	38	48	2.878 N	111	55 49.26	39 W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name	
80.0	80.0	20.000	26.000	20"	
600.1	600.0	16.000	17.500	16"	•
2581.1	2500.0	13.375	14.750	13 3/8"	
5869.0	5500.0	9.625	12.250	9 5/8"	
6959.6	6550.0	5.500	8.750	5 1/2"	•

Formations

MD ft	TVD ft	Formations	Lithology	Ţ	Dip Angle deg	Dip Direction deg
5764.8	5404.0	Twin Creek			0.00	0.00

AAMENER

BOND STATEMENT

Bond coverage pursuant to 43 CFR 3104 for lease activities is being provided by Wolverine Gas and Oil Company of Utah, LLC with their Bond, filed with Bureau of Land Management in the amount of \$25,000.

The Bond Number is WY3329

OPERATOR'S REPRESENTATIVE AND CERTIFICATIONS

The responsible field representative for the Wolverine Federal #17-4, on behalf of Wolverine Gas and Oil Company of Utah, LLC, is Steve Hash, PE, available via Wolverine Gas and Oil Company of Utah, LLC, One Riverfront Plaza, 55 Campau NW, Grand Rapids, MI 49503. (616) 458-1150.

I hereby certify that I, or persons under my direct supervision, have inspected the drill site and access route; that I am familiar with the conditions that currently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with operations proposed herein will be performed by Wolverine Gas and Oil Company of Utah, LLC and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Date:

July 20. 2004

Name and Title:

Richard Moritz, Vice-President, Land and Legal

OPERATOR RIDER

This rider is being submitted to comply with 43 CFR 3104.2 which states "... The operator on the ground shall be covered by a bond in his/her own name as principal, or a bond in the name of the lessee or sublessee, provided that a consent of the surety, or the obligor in the case of a personal bond, to include the operator under the coverage of the bond is furnished to the Bureau office maintaining the bond."

The obligor hereby agrees to extend the coverage of their bond to include liabilities for operations conducted by Wolverine Gas and Oil Company of Utah, LLC and Wolverine Gas and Oil Company of Wyoming, LLC on Federal oil and gas leases.

Coverage includes the performance of all lease obligations, both past and future, including the responsibility to properly plug and abandon any and all wells, including related surface restoration, and to pay any outstanding rentals or royalties due.

This coverage of operations shall continue whether or not the lease subsequently expires, terminates, is canceled, or relinquished; provided, however, that this rider shall not act to increase the actual cumulative or potential liability of the obligor above the face amount of the bond.

Executed this 3rd day of March, 2004.

Witness:

One Riverfront Plaza, 55 Campau NW

Grand Rapids, MI 49503-2616

Address of witness

Wolverine Gas and Oil Corporation

Obligor

For Obligor: Gary R. Blecker

Vice President and COO

One Riverfront Plaza, 55 Campau NW Grand Rapids, MI 49503-2816

Obligor's address



State of Utah

Department of Natural Resources

ROBERT L. MORGAN Executive Director

Division of Oil, Gas & Mining

LOWELL P. BRAXTON Division Director OLENE S. WALKER
Governor

GAYLE F. McKEACHNIE

Lieutenant Governor

November 17, 2004

Wolverine Gas & Oil Company of Utah, LLC One Riverfront Plaza 55 Campau NW Grand Rapids, MI 49503

Re: Wolverine Federal 17-4 Well, Surface Location 1679' FNL, 2306' FWL, SE NW, Sec. 17, T. 23 South, R. 1 West, Bottom Location 1980' FSL,

1980' FEL, NW SE, Sec. 17, T. 23 South, R. 1 West, Sevier County, Utah

Gentlemen:

Pursuant to the provisions and requirements of Utah Code Ann.§ 40-6-1 et seq., Utah Administrative Code R649-3-1 et seq., and the attached Conditions of Approval, approval to drill the referenced well is granted.

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date. The API identification number assigned to this well is 43-041-30035.

Sincerely,

John R. Baza Associate Director

pab

Enclosures

cc:

Sevier County Assessor

Bureau of Land Management, Moab District Office



Operator:	Wolverine Gas & Oil Company of Utah, LLC							
Well Name & Number	Wolverine Federal 17-4							
API Number:	43-0	941-30035						
Lease:	UTU	J-73528						
Surface Location: SE NW Bottom Location: NW SE	Sec. 17 Sec. 17	T. 23 SouthT. 23 South	R. 1 West R. 1 West					

Conditions of Approval

1. General

Compliance with the requirements of Utah Admin. R. 649-1 *et seq.*, the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

2. Notification Requirements

Notify the Division within 24 hours of spudding the well.

• Contact Carol Daniels at (801) 538-5284.

Notify the Division prior to commencing operations to plug and abandon the well.

• Contact Dan Jarvis at (801) 538-5338

3. Reporting Requirements

All required reports, forms and submittals will be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7), Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

- 4. State approval of this well does not supersede the required federal approval, which must be obtained prior to drilling.
- 5. In accordance with Utah Admin. R.649-3-11, Directional Drilling, the operator shall submit a complete angular deviation and directional survey report to the Division within 30 days following completion of the well.
- 6. Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis. (Copy Attached)

Page 2 API #43-041-30035 November 17, 2004

7. This proposed well is located in an area for which drilling units (well spacing patterns) have not been established through an order of the Board of Oil, Gas and Mining (the "Board"). In order to avoid the possibility of waste or injury to correlative rights, the operator is requested, once the well has been drilled, completed, and has produced, to analyze geological and engineering data generated therefrom, as well as any similar data from surrounding areas if available. As soon as is practicable after completion of its analysis, and if the analysis suggests an area larger than the quarter-quarter section upon which the well is located is being drained, the operator is requested to seek an appropriate order from the Board establishing drilling and spacing units in conformance with such analysis by filing a Request for Agency Action with the Board.

008

Form 3160-5 (April 2004) DEPARTMENT OF TI BUREAU OF LAND M. SUNDRY NOTICES AND F Do not use this form for proposal abandoned well. Use Form 3160 -: SUBMIT IN TRIPLICATE- Other in 1. Type of Well Oil Well Gas Well Othe Name of Operator Wolverine Gas & Oil Co of Utah, LLC 3a Address One Riverfront Plaza, 55 Campau NW, Grand Rapids, N 4. Location of Well (Footage, Sec., T. R., M. or Survey Description)	HE INTERIOR ANAGEMENT REPORTS ON WELLS be to drill or to re-enter and (APD) for such proposals. Instructions on reverse side. Instructions on reverse side. Instructions on reverse side. Instructions on reverse side.	7. If Unit or CA/Agreement, Name and/or No. Wolverine Fed Exploration Unit 8. Well Name and No. Wolverine Federal #17-4 9. API Well No. 43-041-30035 10. Field and Pool, or Exploratory Area Covenant Field
SHL: 1736' FNL & 2293' FWL BHL: 1980' FSL & 1980' FEL		11. County or Parish, State Sevier Co, UT
12. CHECK APPROPRIATE BOX(ES)	TO INDICATE NATURE OF NO	OTICE, REPORT, OR OTHER DATA
TYPE OF SUBMISSION	TYPE OF AC	CTION
Acidize Acidize Alter Casing Casing Repair Change Plans Convert to Injection Describe Proposed or Completed Operation (clearly state all lifthe proposal is to deepen directionally or recomplete horize Attach the Bond under which the work will be performed or	Frechire Treat New Construction Plug and Abandon Plug Back Provide the Bond No. on file with BLM/E ation results in a multiple completion or recibility of the Bond No. The state of th	erence Ver4 2004.12.22)
14. Thereby certify that the foregoing is true and correct		
Name (Printed/Typed) Steven R Hash - EXACT Engineering Inc	Title Consulting	g Engineer (918) 599-9400
Signature State IZ. Light	Date	12/22/2004
THIS SPACE FO	R FEDERAL OR STATE	OFFICE USE
Approved by Conditions of approval, if any, are attached. Approval of this neertify that the applicant holds legal or equitable title to those righthappears the equitable title to those righthappears to conduct operations thereon	ghts in the subject lease Office	Date
Title 18 U.S.C Section 1001 and Title 43 U.S.C Section 1212, mal States any false, fletitious or fraudulent statements or representa	ce it a crime for any netton knowingly a	and willfully to make to any department or agency of the United tion.

(Instructions on page 2)

Section 17, T.23 S., R.1 W., S.L.B. & M. FOUND 1987 B.LM. REESTABLISHED FROM 1967 BLM. SURVEY BRASS CAP 589'09'20"E 1297.56" \$89'09'20"E 1297.56 NOLVERINE FEDERAL #17-4 ELEV. UNGRADED GROUND = 5738.07 2249' FML FOUND 1987 B.L.M. BRASS CAP FOUND 1967 B.L.M. BRASS CAP REESTABLISHED FROM FOUND 1987 B.L.M. 1987 B.LM. SURVEY BRASS CAP FOUND 1967 B.LM. 587'30'57"W BRASS CAP 2458.54 587'30'57"W 2458.54 BASIS OF BEARINGS BASIS OF BEARING USED WAS NO2"3"06"W BETWEEN THE SOUTHWEST CORNER AND THE WEST QUARTER CORNER OF SECTION 17, T,23 S, R.1 W., S.L.B. & M. LATITUDE = 38'48'18.901" (38.805250278) EDNGTUDE = -111'56'01.826" (111.933840556)

PROJECT

Wolverine Gas & Oil Company of Utah, LLC.

WELL LOCATION, LOCATED AS SHOWN IN THE SE 1/4 OF THE NW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M. SEWER COUNTY, UTAH

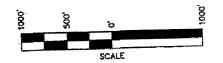
LEGEND

- -I- SECTION CORNERS LOCATED
- QUARTER SECTION CORNERS LOCATED
- PROPOSED WELL HEAD

NOTE: THE PURPOSE OF THIS SURVEY WAS TO PLAT THE WOLVERINE FEDERAL #17-4 LOCATION. LOCATED IN THE SE 1/4 OF THE NW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M. SEVIER COUNTY.

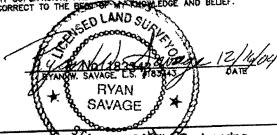
BASIS OF ELEVATION

ELEVATION BASED ON U.S.G.S. BENCH MARK LOCATED IN THE SW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.



CERTIFICATE

THIS IS TO CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION, AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MATRICIAL EDGE AND BELIEF.





835 South 190 West 2 Richfield, Utah 84701 Phone (435) 896-8266

Fox (435) 898-8268 www.jonesonddemilia.com

Well Location Plat for

Wolverine Gas & Oil Company of Utah, LLC.

1	ACTION ST	M'MAEAED	CHECKED	DRAM	PROJECT NO.	\$46E 40
1	OESKONED	T.W.G.	R.W.S.	K.B.B.	0406-160	1
1	DATE		DWO,HAME	SCALE 1 -1000	Q490 100	
	Opt. 2004		Wells	11 -1000	L	

WOLVERINE GAS AND OIL COMPANY OF UTAH, LLC

DRILLING PROGNOSIS

Wolverine Federal #17-4 NW SE SEC 17-T23S-R1W SEVIER CO., UTAH

BRIEF DRILLING PLAN

Due to surface topography constraints, directionally drill a 6970' MD (6550'TVD) test of the Navajo 1 formation on a day work contract basis from Wolverine's present work area known as Drill Pad A-2 located in Sec 17 T23S – R01W, Sevier Co, UT. Please refer to the directional drilling plan attached for detailed hole angle, trajectory and target information. Deviation is the primary drilling concern in this area. No abnormal pressure or hydrogen sulfide gas is expected, however, an H2S detector will be utilized. The projected surface and bottomhole locations are to be as follows:

Surface Location:

1680' fnl & 2249' fwl of Sec 17 T23N – R01W

Surface Location: 1680' fnl & 2249' fwl of Sec 17 T23N – R01W BHL @ top of NVJO1 (5700' TVD) 1980' fsl & 1980' fel of Sec 17 T23N – R01W

20" conductor casing will be cemented to surface at approximately 100-120 ft BGL. 16" surface casing will be set & cemented to surface in a 17-1/2" hole deviated to approximately 3 deg at +/-600' (+/-600' TVD). A 12-1/4" hole will then be drilled to +/-5570' (5200' TVD) deviated to approximately 30 deg from vertical by 2200' maintaining tangent to TD of 5570'. 9-5/8" intermediate casing will be set from surface to TD & cemented across the lowermost 2500'. An 8-1/2" hole will then be drilled to +/-6970' (6550' TVD). 5-1/2" production casing will then be run from TD back to surface & cemented to approximately 300' into the 9-5/8" intermediate casing. In the event of lost circulation or other problems while drilling the 12-1/4" hole from 600' to 2700', the hole will be enlarged to 15" and a 13-3/8" casing string will be run from surface to TD (no deeper than 2700') and cemented into the surface casing. This is a contingency only.

EMERGENCY NUMBERS

Sevier Valley Medical Center	(435)-896-8271
Medical Helicopter	(800)-453-0120
Sheriff Department	(435)-896-2600
Fire Department-Richfield, UT	(435)-896-5479
Bureau of Land Management (Richfield):	(435)-896-1500
Bureau of Land Management (Salt Lake City)	(801) 539-4045
Utah Division of Oil, Gas and Mining (Salt Lake City):	(801)-538-5340

United States Bureau of Land Management

Contact Al McKee (801) 539-4045 24 hrs prior to spudding

Utah Division of Oil, Gas and Mining

Contact Carol Daniels (801) 538-5284, 24 hrs prior to spudding

GENERAL INFORMATION

OBJECTIVE: Navajo 1 @ 5700' (TVD)

ELEVATION: 5736' GL (actual)

PROJECTED TOTAL DEPTH:

6970' MD; 6550' TVD

SURFACE LOCATION:

1680' FNL & 2249' FWL

Section 17-23S-1W

COUNTY: S

Sevier

STATE: Utah

DIRECTIONS TO LOCATION:

From the town of Sigurd, Utah go south

approximately 3.5 miles on Hwy #24 to location on

the left side of the road.

PROPOSED CASING PROGRAM:

Hole Size	Casing Size	Wt./Ft.	Grade	Joint	Measured Depth Set
	20"	.25 wall	X42	PE welded	100-120'
17-1/2"	16"	65#	H-40	BTC	0'-600'
*** 15"	13-3/8"	68#	J-55	BTC	0'-2700'
12-1/4"	9-5/8"	47#	N-80	LTC	0'-5,570'
8-1/2"	5-1/2"	17#	N-80	LTC	0'- 6970'

^{***} contingency only – set only if hole conditions dictate

Hole Size	Casing Size	Drift ID, in.	OD of Couplings	Annular Volume in OH, cf/ft	Annular Volume in Csg, cf/ft	Capacity of casing, cf/ft
30"	20"	Conductor	Na			
20"	16"	15.062	17.0	.7854	.7854	1.2476
*** 15"	13-3/8"	12.259	14.375	.2927	.2927	.8406
121/4"	9-5/8"	8.525	10.625	0.3127	0.4659	0.4340
8-1/2"	5-1/2"	4.767	6.050	0.2291	0.2291	0.1305

^{***} contingency only – set only if hole conditions dictate

GEOLOGIC INFORMATION:

Formation	Interval (TVD)	Interval (MD)	Lithology		Abnormal Psi
Arapien	Surf – 5400'	Surf – 5770'	sh, siltstone,salt,evaporites		
TwinCreek1	5400'- 5700'	5770'6090'	Carbonates	X	
Navajo 1	5700- 6350'	6090'6770'	Sandstone w/ minor shale	X	
Total Depth	6550'	6970'	Sandstone w/ minor shale		

CONSTRUCTION OF SURFACE LOCATION

360'x 180' Pad 150'x 100' x 10' Reserve Pit with a 12 mil synthetic liner 96" diameter tin horn cellar, 10' deep. Flare pit a minimum of 100' from wellhead.

JONETUENTIAL

SURFACE HOLE: 0' to 600'

Directionally drill a 17-1/2" hole with a TCI rock bit, mud motor & MWD equipment to approximately 600' using fresh water and gel/lime sweeps when necessary (make hole to fit 16" casing). Loss circulation is not expected to be a problem in this interval. If losses do occur, begin pumping LCM sweeps. If loss circulation cannot be healed with ±25 ppb LCM, consider dry drilling (no returns). Maintain hole direction to approximately 230 degr azimuth in keeping with the attached directional plan.

PRESSURE CONTROL & SAFETY EQUIPMENT FOR SURFACE HOLE

Bottom to Top

20" drilling nipple – returns to mud pits – no pressure control

MUD PROGRAM FOR SURFACE HOLE

<u>DEPTH</u>	MUD WEIGHT	TYPE	VISC	PH	FLUID LOSS
0 -600'	8.4 - 8.9	FW/Gel/Lime	26-45	7-9	N/C

Note: Sweep hole every 100 - 200 feet or as needed for hole cleaning. Control the pH with Lime & Caustic to aid in gel flocculation for better carrying capacity.

CASING PROGRAM FOR SURFACE HOLE

<u>DEPTH</u>	SIZE	LENGTH	<u>WT</u>	GRADE	THREAD	REMARKS
0 - 600'	16"	600'	65#	H-40	BT&C	

Casing Running Sequence:

guide shoe

1 jt of 16" 65# H-40 BT&C

Float collar

Balance of 16" 65# H-40 BT&C

Centralizers as read.

RU cement co., hold safety meeting, test lines, cement 16" casing per cement company recommendation. Displace with fresh water or mud if used.



CEMENTING PROGRAM FOR SURFACE HOLE

Lead:

855 sx Premium Class G

2% calcium chloride

2 lb/sx flocele

Mixed at: 15.8 ppg

1.17 ft³/sx

5.01 gal/sx

<u>MUST CIRCULATE CEMENT TO SURFACE</u> If the cement does **not** circulate to surface contact the BLM and UDOGM office for further instructions and remedial actions.

WOC A TOTAL OF 24 HOURS:

Wait 4 hours with the hydrostatic pressure of the displacement fluid in place, then cut off conductor and weld on a 16-3/4" 3M x 16" SOW casing head. NU 20" 2M diverter w/ 7-1/16" HCR valve rigged to mud/gas separator, mud tanks and flare pit.

PROTECTIVE CASING HOLE: 600' to 5570'

Directionally drill a 12-1/4" hole with a PDC and/or a TCI rock bit, mud motor & MWD equipment to approximately 5570' MD using a low solids – non dispersed system converting to salt mud in the lower portion. Loss circulation may be a problem in this interval. If losses do occur, begin pumping LCM sweeps. If loss circulation cannot be healed with ±25 ppb LCM, consider dry drilling (no returns). If conditions are severe consider implementing a contingency for casing the problem zone with 13-3/8" csg as outlined above. Build hole angle to approximately 30 degrees by 2200' then maintain hole angle and direction to casing point in keeping with the attached directional plan. Protective casing should be set near the base of the Arapien interval to isolate potential poor hole conditions prior to drilling potential pay zones in the Twin Creek Lime.

PRESSURE CONTROL AND SAFETY EQUIPMENT FOR PROTECTIVE CASING STRING

Bottom to Top (see attached 2M Diverter diagram)

16-3/4" 3M x 16" SOW csg head.
16-3/4" 3M x 20" 2M spacer spool
20" 2M x 20" 2M x (2) 7-1/16" 2m side outlets
one outlet 7-1/16" HCR valve w/ 6" blooie line to mud separator & flare pit
one outlet (blank)
20" 2M Annular Preventer

20" 2M flanged btm drilling nipple w/ fillup line

Upper kelly cock valves with handles available Safety valves and subs to fit all drill string connections in use Inside BOP or float sub available



Testing Procedure:

Annular Preventer & HCR Valve

The annular preventer will be pressure tested to 1000 psi for a period of ten minutes or until provisions of the test are met, whichever is longer. At a minimum, the pressure test will be performed:

- 1) When the annular is initially installed
- 2) Whenever any seal subject to test pressure is broken
- 3) Following related repairs and at 30 day intervals

The annular preventer will be functionally operated once per week. All BOP drills will be recorded in the IADC driller's log.

Accumulator:

The accumulator will have sufficient capacity to open the hydraulically controlled gate valve (if so equipped), close the annular preventer, and retain a minimum of 200 psig above pre-charge on the closing manifold without the use of the closing unit pumps. The reservoir capacity will be double the accumulator capacity, and the fluid level will be maintained at the manufacturer's recommendations. The accumulator shall have two (2) independent power sources to close the preventers. Nitrogen bottles may be one of the independent power sources and, if so, shall maintain a charge equal to the manufacturer's specifications.

MUD PROGRAM FOR PROTECTIVE CASING HOLE

DEPTH	MUD WEIGHT	TYPE	VISC	pН	FLUID LOSS
600' - 5570'	8.7 - 9.6	LSND	34-45	9.0-10.0	12cc or Less

If required, implement a natural breakover to a salt or gypsum system as salt and gypsum sections are drilled. If loss circulation becomes a problem use LCM sweeps to control seepage & clean hole. Implement casing contingency if absolutely necessary.

CASING PROGRAM FOR PROTECTIVE CASING HOLE

DEPTH	SIZE	LENGTH	WT	GRADE	THREAD	REMARKS
0' – TD'	9-5/8"	5570°	47#	N-80	LT&C	

Rig up casing tools and run 9-5/8" protective casing as follows:

Float shoe, 2 joint of 9-5/8" 47.0# N-80 LT&C casing, float collar, 6 centralizers, middle shoe joint and one every other joint for 12 jts, run balance of 9-5/8" 47# N-80

CEMENT PROGRAM FOR PROTECTIVE CASING

725 sx (50:50) Poz: Premium Weight: 13.8 ppg 3 % Bentonite Yield: 1.43 ft³/sx 0.3% Halad R-344 (Low Fluid Loss Control) Water: 6.45

0.3% Halad R-344 (Low Fluid Loss Control) gal/sx 15 % Salt 0.3% D-AIR 3000 (Defoamer) 0.25 lb/sx Flocele

TOC at +3500 ft

Calculate cement volume based on gauge hole plus 30% excess. Displace with mud. Set slips, ND diverter stack, cut off, NU & test wellhead. Clean pits and prepare for next hole section.

PRODUCTION HOLE: 5,570 to 6970'

Trip in the hole with an 8-1/2" insert bit, mud motor & MWD. Drill float, shoe and 20'of new hole. Perform an integrity test to 500 psi w/ 9ppg mud (10.5 ppg mud wt equivalent). Drill with a low colloid polymer system.

PRESSURE CONTROL AND SAFETY EQUIPMENT FOR PRODUCTION CASING STRING

Bottom to Top (see attached 5M BOP Stack diagram)

11" 5M x 9-5/8" SOW csg head.

11" 5M x 11" 5M mud cross w/ (2) side outlets one outlet 2-1/16 5M kill line

one outlet 3-1/16" 5M choke line

11" 5M double ram blowout preventers with 4-1/2" pipe rams top & CSO rams btm

11" 5M annular preventer

11" Rotating head w/ fillup line

Connect BOP to choke manifold with pressure guage Upper kelly cock valves with handles available Safety valves and subs to fit all drill string connections in use Inside BOP or float sub available

Testing Procedure:

Annular Preventer

The annular preventer will be pressure tested to 1500 psi for a period of ten minutes or until provisions of the test are met, whichever is longer. At a minimum, the pressure test will be performed:

- 4) When the annular is initially installed
- 5) Whenever any seal subject to test pressure is broken
- 6) Following related repairs and at 30 day intervals

The annular preventer will be functionally operated once per week.

Blowout Preventer

The BOP, choke manifold and related equipment will be pressure tested to 4500 psi, or 70% of the internal yield of the casing. Pressure will be maintained for a period of at least ten minutes or until the requirements of the test are met, whichever is longer. At a minimum the pressure test will be performed:

- 1) When the BOP is initially installed
- 2) Whenever any seal subject to test pressure is broken
- 3) Following related repairs and at 30 day intervals

The pipe and blind rams will be activated each trip, but not more than once each day. All BOP drills will be recorded in the IADC driller's log.

Accumulator:

The accumulator will have sufficient capacity to open the hydraulically controlled gate valve (if so equipped), close all rams plus the annular preventer, and retain a minimum of 200 psig above pre-charge on the closing manifold without the use of the closing unit pumps. The reservoir capacity will be double the accumulator capacity, and the fluid level will be maintained at the manufacturer's recommendations. The accumulator shall have two (2) independent power sources to close the preventers. Nitrogen bottles may be one of the independent power sources and, if so, shall maintain a charge equal to the manufacturer's specifications.

The accumulator pre-charge pressure test will be conducted prior to connecting the closing unit to the BOP stack and at least once every six months thereafter. The accumulator pressure will be corrected if the measured pre-charge pressure is found to be above or below the maximum or minimum limits specified in Onshore Oil & Gas Order Number 2 (only nitrogen gas may be used to pre-charge).

Choke Manifold Equipment, Valves and Remote Controls

All choke lines will be straight lines unless turns use tee blocks or are targeted with running tees, and will be anchored to prevent whip and vibration



A valve will be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve will be maintained in the open position and will be closed only when the power source for the accumulator is inoperative.

Remote controls shall be readily accessible to the driller. Remote controls will be capable of both opening and closing all preventers. Master controls will be at the accumulator and will be capable of opening and closing all preventers and the choke line valve (if so equipped).

The choke manifold and BOP extension rods with hand wheels will be located outside the rig sub structure. The hydraulic BOP closing unit will be located at least twenty-five feet from the well head but readily accessible to the driller. Exact locations and configurations of the hydraulic BOP closing unit will depend upon the particular rig contracted to drill this well.

A flare line will be installed after the choke manifold, extending 100 feet from the center of the drill hole to a separate flare pit.

MUD PROGRAM FOR PRODUCTION HOLE

DEPTH	MUD WEIGHT	TYPE	VISC	pH FI	LUID LOSS
5570' - 6970'	8.7 – 9.9	LC Polymer	34-50	9.0-10.0	10cc or Less

EVALUATION PROGRAM FOR PRODUCTION HOLE

At TD, circulate and condition hole clean for logs. Short trip to the intermediate casing monitoring well closely. TOH for logs.

Mudlogger: From 1500' to total depth.

Electric Logs:

Tool	PCP to TD
Dual Laterolog/GR/Caliper (DLL) (DIL if fresh mud system)	Yes
Micro Spherically Focused Log (MFSL)	Yes
CNL/LithoDensity/GR/Caliper (CNL/LD/GR/CAL)	Yes
Formation Micro Scanner/GR	Yes

<u>DST</u>: To be decided Cores: To be decided

CASING PROGRAM FOR PRODUCTION HOLE

DEPTH	SIZE	LENGTH	WT	GRADE	THREAD	REMARKS
0' – TD'	5-1/2"	6970'	17#	N-80	LT&C	

Rig up casing tools and run 5-1/2" production casing as follows:

Float shoe

2 joints of 5-1/2" 17# N-80 LT&C casing

Float collar

Centralizers as read.

Run balance of 5-1/2" 17# N-80.

CEMENT PROGRAM FOR PRODUCTION CASING

245 sx (50:50) Poz: Premium
Weight: 14.35 ppg
2 % Bentonite
Vield: 1.23 ft³/sx
0.3% Halad R-344 (Low Fluid Loss Control)
Water: 4.81 gal/sx
0.25 lb/sx Flocele

TOC at \pm 5200 ft in 9-5/8" csg Calculate cement volume based on log caliper +/- 25%. Displace cement w/water. Set slips, ND BOP's, cut off, NU & test wellhead. Clean pits and release rig.

SCHEDULE

Location preparation is presently scheduled to begin on or about January 1, 2005 Drilling operations are anticipated to begin on or about January 1, 2005

end



PRESSURE CONTROL SYSTEM SCHEMATIC

Prepared by: EXACT Engineering, Inc Tulsa, OK (918) 599-9400

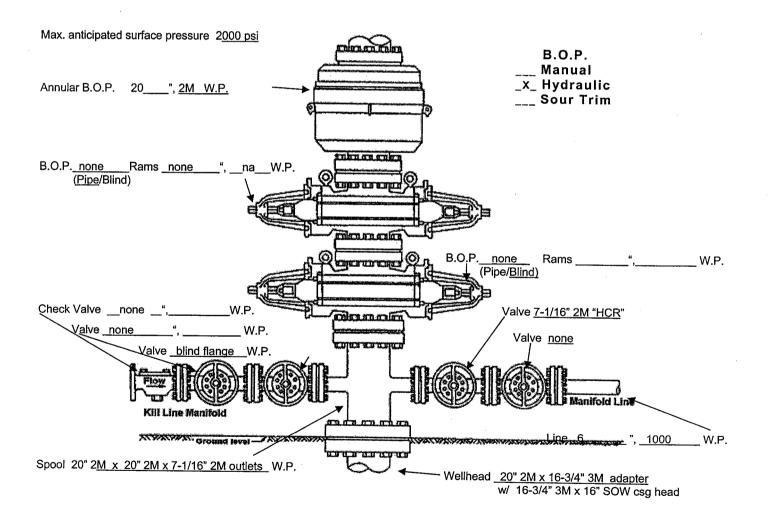
2M Diverter Stack — to be utilized while drilling holes for surface and protective casing thru Arapien formation section

Operator:

Wolverine Gas & Oil Co. of Utah, LLC

Well name and number

Wolverine Federal #17-4





PRESSURE CONTROL SYSTEM SCHEMATIC

Prepared by: EXACT Engineering, Inc Tulsa, OK (918) 599-9400

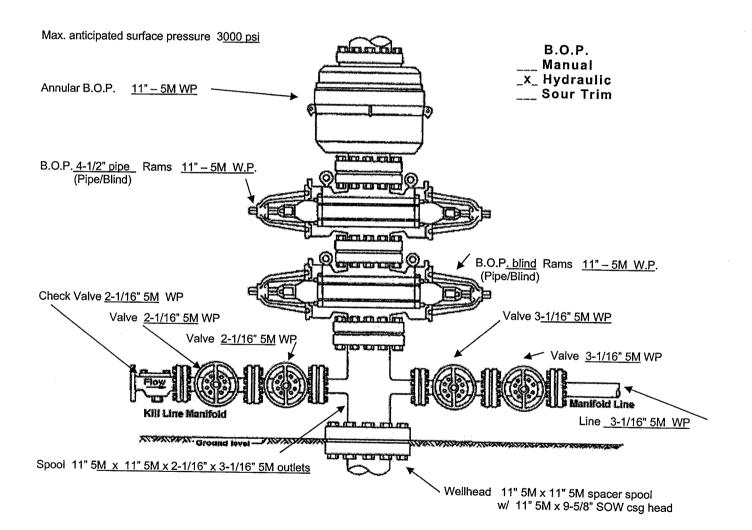
5M BOP Stack --- to be utilized while drilling holes for production casing thru Twin Creek & Navajo intervals

Operator:

Wolverine Gas & Oil Co. of Utah, LLC

Well name and number

Wolverine Federal #17-4



Weatherford

Wolveine Gas & Oil Co of Utah, L

SITE DETAILS

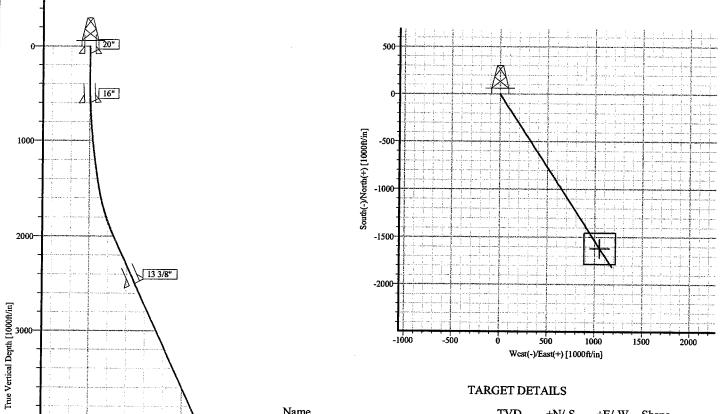
Pad A-2 T23S R01W Sevier County, Utah NW/4 SE/4 Sec 17

17-4 SFC Location 1680' FNL & 2249' FWL Sec 17

Azimuths to True North Magnetic North: 12.95° Magnetic Field Strength: 5213an Dip Angle: 64.57° Date: 7/6/2004 Model: igr/2000

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1 2 2	0.0 300.0	0.00	0.00 147.03	0.0 300.0	0.0 0.0	0.0 0.0	0.00	0.00 147.03	0.0	
5	1506.1 1993.8 5767.1	10.00 24.63 24.63	147.03 147.03 147.03	1500.0 1964.3 5394.3	-88.1 -209.5 -1528.8	57.1 135.9 991.8	0.83 3.00 0.00	0.00 0.00	105.0 249.7 1822.4	
7	6088.2 6972.3	15.00 15.00	147.03 147.03	5696.0 6550.0	-1620.0 -1812.0	1051.0 1175.5	3.00 0.00	180.00 0.00	1931.1 2159.9	NVJ01 1980' FS & 1980' FE 17-4



4000-		N	ame		TVD	+N/-S	+E/-W	Shape
-1000		N	VJ01 1980' FS & 1980' FE 17-4		5696.0	-1620.0	1051.0	Rectangle (330x330)
-								•
_	 -					CASI	NG DETAL	LS
_				No.	TVD	MD	Name	Size
5000-		1000		1 2	80.0 600.0	80.0 600.1	20" 16"	20.000 16.000
-		Twin Creek 9 5/8	Ψ.	3 4 5	2500.0 5500.0 6550.0	2583.1 5881.9 6972.3	13 3/8" 9 5/8" 7"	13.375 9.625 7.000
	 				70000	07.2.0	,	7.000
6000			J01 1980' FS & 1980' FE 17-4		F	ORMATIC	ON TOP DE	TAILS
5000					No. T	VDPath 1	MDPath F	ormation
-			7"		1	5400.0	5773.4 T	win Creek

3000

4000

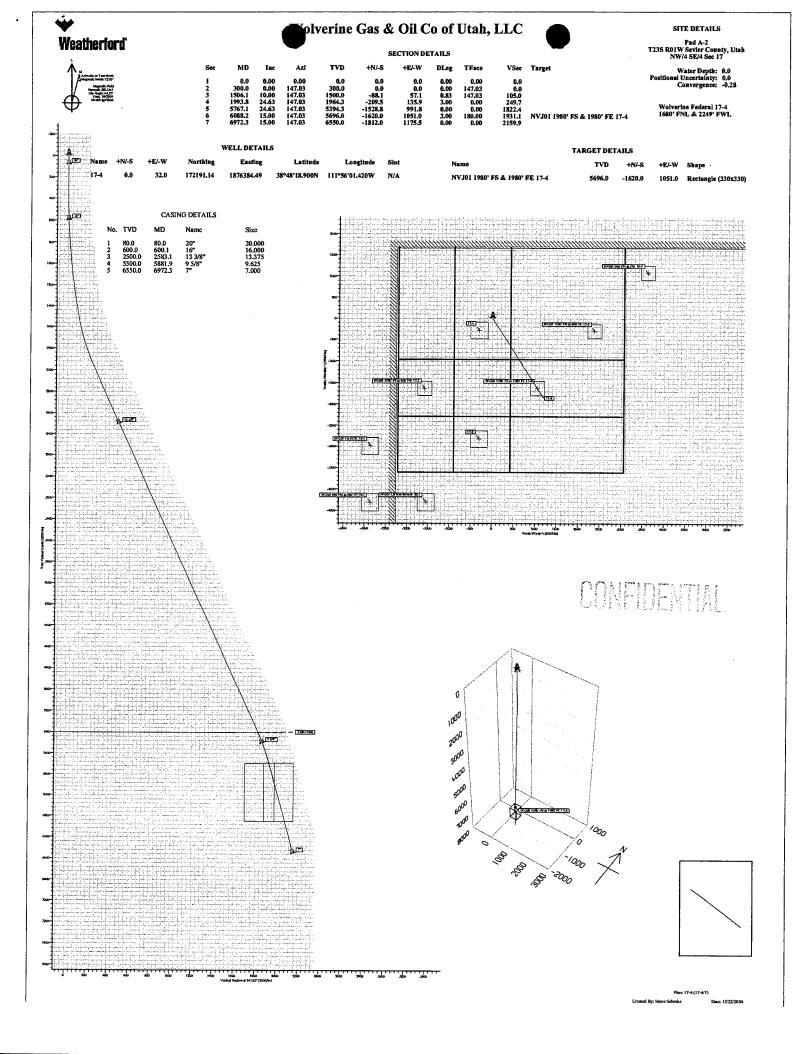
1000 2000 Vertical Section at 147.03° [1000ft/in] Plan: 17-4 (17-4/1)

Created By: Steve Schmitz

Date: 12/22/2004

hecked:

ate:



Weatherford **Planning Report**

Plan:



Page:

1

Company: Wolverine Gas & Oil Co of Utah

Field: Sevier County, Utah

Site: Pad A-2

Well: 17-4 Wellpath: 1

Date: 12/22/2004

Time: 09:51:15

Co-ordinate(NE) Reference: Well: 17-4, True North

Vertical (TVD) Reference: Section (VS) Reference:

SITE 0.0 Well (0.00N,0.00E,147.03Azi)

Field:

Sevier County, Utah

Map System: US State Plane Coordinate System 1927

Geo Datum: NAD27 (Clarke 1866) Sys Datum: Mean Sea Level

Map Zone: Coordinate System: Geomagnetic Model: Utah, Central Zone

Well Centre igrf2000

From:

Well:

Pad A-2

T23S R01W Sevier County, Utah

NW/4 SE/4 Sec 17

Site Position:

Lease Line

Position Uncertainty:

0.0 ft

Latitude: Longitude:

North Reference: Grid Convergence: True -0.28 deg

Ground Level:

0.0 ft

Northing:

Easting:

Slot Name:

Well Position:

17-4 1680' FN & 2249FW of Sec 17

+N/-S

0.0 ft Northing: 172191.14 ft 32.0 ft Easting: 1876384.49 ft Latitude: Longitude: 38 48 18.900 N

+E/-W **Position Uncertainty:**

0.0 ft

56 111 1.420 W

Surface

Wellpath: 1 Current Datum:

0.0

7/6/2004

Height 0.0 ft

+N/-S

Tie-on Depth: Above System Datum:

Drilled From:

0.0 ft Mean Sea Level

Magnetic Data: Field Strength:

52133 nT

Declination: Mag Dip Angle: +E/-W

12.95 deg 64.57 deg Direction

Vertical Section: Depth From (TVD)

ft 0.0

147.03

deg

Plan:

17-4

Date Composed: Version:

7/6/2004

Principal: Yes Tied-to:

ft

0.0

From Surface

Plan Section Information

MID ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
300.0	0.00	147.03	300.0	0.0	0.0	0.00	0.00	0.00	147.03	
1506.1	10.00	147.03	1500.0	-88.1	57.1	0.83	0.83	0.00	147.03	
1993.8	24.63	147.03	1964.3	-209.5	135.9	3.00	3.00	0.00	0.00	
5767.1	24.63	147.03	5394.3	-1528.8	991.8	0.00	0.00	0.00	0.00	
6088.2	15.00	147.03	5696.0	-1620.0	1051.0	3.00	-3.00	0.00	180.00	NVJ01 1980' FS & 1980' FE
6972.3	15.00	147.03	6550.0	-1812.0	1175.5	0.00	0.00	0.00	0.00	144901 1900 LO Ø 1800 LE

Section 1: Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100f	Build t deg/100ft	Turn deg/100ft	TFO deg
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
100.0	0.00	147.03	100.0	0.0	0.0	0.0	0.00	0.00	0.00	147.03
200.0	0.00	147.03	200.0	0.0	0.0	0.0	0.00	0.00	0.00	147.03
300.0	0.00	147.03	300.0	0.0	0.0	0.0	0.00	0.00	0.00	147.03

Section 2: Start Build 0.83

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100f	Turn t deg/100ft	TFO deg
400.0	0.83	147.03	400.0	-0.6	0.4	0.7	0.83	0.83	0.00	0.00
500.0	1.66	147.03	500.0	-2.4	1.6	2.9	0.83	0.83	0.00	0.00
600.0	2.49	147.03	599.9	-5.5	3.5	6.5	0.83	0.83	0.00	0.00
600.1	2.49	147.03	600.0	-5.5	3.5	6.5	0.00	0.00	0.00	0.00
700.0	3.32	147.03	699.8	-9.7	6.3	11.6	0.83	0.83	0.00	0.00
800.0	4.15	147.03	799.6	-15.2	9.8	18.1	0.83	0.83	0.00	0.00
900.0	4.97	147.03	899.2	-21.8	14.2	26.0	0.83	0.83	0.00	0.00

Weatherford Planning Report



Field: Site: Well:	Sevier Co Pad A-2 17-4	Gas & Oil C unty, Utah	o of Utah			Date: 12/22 Co-ordinate(N Vertical (TVD Section (VS) R	E) Reference Reference:	SITE 0.0 Well (0.0	-4, True No		Page:	2	}
Wellpath:		-11.0.00				Plan:	<u> </u>	17-4					
Section MD	2 : Start Bu	Azim	TVD	+N/-S	+E/-W	vs	DIC	D13	T	TEO			
ft	deg	deg	ft	ft	ft	ft	DLS deg/100ft	Build deg/100f	Turn t deg/100ft	TFO deg			
1000.0		147.03	998.8	-29.7	19.3		0.83	0.83	0.00	0.00			
1100.0 1200.0	6.63 7.46	147.03 147.03	1098.2 1197.5	-38.8 -49.1	25.2		0.83	0.83	0.00	0.00			
1300.0		147.03	1296.5	-49.1 -60.6	31.8 39.3		0.83 0.83	0.83 0.83	0.00 0.00	0.00 0.00			
1400.0	9.12	147.03	1395.4	-73.3	47.5	87.4	0.83	0.83	0.00	0.00			
1506.1	10.00	147.03	1500.0	-88.1	57.1	105.0	0.83	0.83	0.00	0.00			
Section	3 : Start Bu	ild 3.00											
MD	Incl	Azim	TVD	+N/-S	+E/-W		DLS	Build	Turn	TFO			
ft	deg	deg	ft	ft	ft	ft	deg/100ft	deg/100fl	deg/100ft	deg			
1600.0 1700.0	12.82 15.82	147.03 147.03	1592.0 1688.9	-103.7	67.2		3.00	3.00	0.00	0.00			
1800.0	18.82	147.03	1784.4	-124.4 -149.4	80.7 96.9	148.3 178.0	3.00 3.00	3.00 3.00	0.00 0.00	0.00 0.00			
1900.0	21.82	147.03	1878.1	-178.5	115.8	212.8	3.00	3.00	0.00	0.00			
1993.8	24.63	147.03	1964.3	-209.5	135.9	249.7	3.00	3.00	0.00	-0.04			
Section	4 : Start Ho	ld											
MD	Incl	Azim	TVD	+N/-S	+E/-W	VS	DLS	Build	Turn	TFO			
ft	deg	deg	ft	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	deg			
2000.0	24.63	147.03	1970.0	-211.7	137.3	252.3	0.00	0.00	0.00	0.00			
2100.0 2200.0	24.63 24.63	147.03 147.03	2060.9 2151.8	-246.6 -281.6	160.0 182.7	294.0 335.7	0.00	0.00	0.00	0.00			
2300.0	24.63	147.03	2242.7	-316.6	205.4	377.4	0.00 0.00	0.00	0.00	0.00 0.00			
2400.0	24.63	147.03	2333.6	-351.5	228.1	419.0	0.00	0.00	0.00	0.00			
2500.0 2583.1	24.63	147.03	2424.5	-386.5	250.7	460.7	0.00	0.00	0.00	0.00			
2600.0	24.63 24.63	147.03 147.03	2500.0 2515.4	-415.6 -421.5	269.6 273.4	495.3 502.4	0.00 0.00	0.00 0.00	0.00 0.00	0.00			
2700.0	24.63	147.03	2606.3	-456.4	296.1	544.1	0.00	0.00	0.00	0.00 0.00			
2800.0	24.63	147.03	2697.2	-491.4	318.8	585.7	0.00	0.00	0.00	0.00			
2900.0 3000.0	24.63 24.63	147.03 147.03	2788.1 2879.0	-526.4 -561.3	341.5 364.2	627.4 669.1	0.00	0.00	0.00	0.00			
3100.0	24.63	147.03	2969.9	-596.3	386.8	710.8	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00			
3200.0	24.63	147.03	3060.8	-631.2	409.5	752.5	0.00	0.00	0.00	0.00			
3300.0 3400.0	24.63	147.03	3151.7	-666.2	432.2	794.1	0.00	0.00	0.00	0.00			i
3500.0	24.63 24.63	147.03 147.03	3242.6 3333.5	-701.2 -736.1	454.9 477.6	835.8 877.5	0.00 0.00	0.00	0.00 0.00	0.00			
3600.0	24.63	147.03	3424.4	-771.1	500.3	919.2	0.00	0.00	0.00	0.00 0.00			i
3700.0	24.63	147.03	3515.3	-806.1	522.9	960.8	0.00	0.00	0.00	0.00			
3800.0 3900.0	24.63 24.63	147.03 147.03	3606.2 3697.1	-841.0 -876.0	545.6 568.3	1002.5 1044.2	0.00	0.00	0.00	0.00			
4000.0	24.63	147.03	3788.0	-911.0	591.0	1044.2	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00			
4100.0	24.63	147.03	3878.9	-945.9	613.7	1127.5	0.00	0.00	0.00	0.00			
4200.0 4300.0	24.63 24.63	147.03 147.03	3969.8 4060.7	-980.9 -1015.8	636.4	1169.2	0.00	0.00	0.00	0.00			
4400.0	24.63	147.03	4060.7 4151.6	-1015.8	659.0 681.7	1210.9 1252.6	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00			
4500.0	24.63	147.03	4242.5	-1085.8	704.4	1294.3	0.00	0.00	0.00	0.00			
4600.0 4700.0	24.63	147.03	4333.4	-1120.7	727.1	1335.9	0.00	0.00	0.00	0.00			}
4800.0	24.63 24.63	147.03 147.03	4424.3 4515.2	-1155.7 -1190.7	749.8 772.5	1377.6 1419.3	0.00 0.00	0.00	0.00	0.00			
4900.0	24.63	147.03	4606.1	-1225.6	795.1	1461.0	0.00	0.00 0.00	0.00 0.00	0.00 0.00			
5000.0	24.63	147.03	4697.0	-1260.6	817.8	1502.6	0.00	0.00	0.00	0.00			
5100.0 5200.0	24.63 24.63	147.03 147.03	4787.9 4878.8	-1295.6	840.5	1544.3	0.00	0.00	0.00	0.00			
5300.0	24.63	147.03	4969.7	-1330.5 -1365.5	863.2 885.9	1586.0 1627.7	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00			
5400.0	24.63	147.03	5060.6	-1400.4	908.6	1669.3	0.00	0.00	0.00	0.00			
5500.0 5600.0	24.63 24.63	147.03	5151.5	-1435.4	931.2	1711.0	0.00	0.00	0.00	0.00			
5700.0	24.63 24.63	147.03 147.03	5242.4 5333.3	-1470.4 -1505.3	953.9 976.6	1752.7 1794.4	0.00 0.00	0.00	0.00	0.00			
5767.1	24.63	147.03	5394.3	-1528.8	991.8	1822.4	0.00	0.00	0.00 0.00	0.00 0.00			
													

Weatherford **Planning Report**



Company: Wolverine Gas & Oil Co of Utah Sevier County, Utah

Site: Pad A-2 Well: 17-4 Wellpath: 1

Date: 12/22/2004 Time: 09:51:15 Co-ordinate(NE) Reference: Well: 17-4, True North Vertical (TVD) Reference: SITE 0.0

Well (0.00N,0.00E,147.03Azi) 17-4

Section (VS) Reference: Plan:

Section	5 •	Start	Dron	-3	വ

MD	Incl deg	Azim deg	TVD	+N/-S ft	+E/-W ft	VS ft	DLS deg/100fl	Build t deg/100ft	Turn deg/100ft	TFO deg	
(5773.4)	24.44	147.03	(5400.0)	-1531.0	993.2	1825.0	3.00	-3.00	0.00	180.00	<u></u>
5800.0	23.65	147.03	5424.3	-1540.1	999.2	1835.8	3.00	-3.00	0.00	-180.00	
5881.9	21.19	147.03	5500.0	-1566.3	1016.1	1867.0	3.00	-3.00	0.00	-180.00	
5900.0	20.65	147.03	5516.9	-1571.7	1019.7	1873.5	3.00	-3.00	0.00	180.00	
6000.0	17.65	147.03	5611.4	-1599.2	1037.5	1906.3	3.00	-3.00	0.00	180.00	
(6088.2)	15.00	147.03	5696.0	-1620.0	1051.0	1931.1	3.00	-3.00	0.00	180.00	

Section 6: Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W	VS ft	DLS deg/100f	Build t deg/100f	Turn t deg/100ft	TFO deg	
6100.0	15.00	147.03	5707.4	-1622.6	1052.7	1934.1	0.00	0.00	0.00	0.00	
6200.0	15.00	147.03	5804.0	-1644.3	1066.8	1960.0	0.00	0.00	0.00	0.00	
6300.0	15.00	147.03	5900.6	-1666.0	1080.8	1985.9	0.00	0.00	0.00	0.00	
6400.0	15.00	147.03	5997.2	-1687.7	1094.9	2011.8	0.00	0.00	0.00	0.00	
6500.0	15.00	147.03	6093.8	-1709.4	1109.0	2037.7	0.00	0.00	0.00	0.00	
6600.0	15.00	147.03	6190.4	-1731.1	1123.1	2063.5	0.00	0.00	0.00	0.00	
6700.0	15.00	147.03	6287.0	-1752.8	1137.2	2089.4	0.00	0.00	0.00	0.00	
6800.0	15.00	147.03	6383.6	-1774.6	1151.3	2115.3	0.00	0.00	0.00	0.00	
6900.0	15.00	147.03	6480.2	-1796.3	1165.4	2141.2	0.00	0.00	0.00	0.00	
6972.3	15.00	147.03	6550.0)	-1812.0	1175.5	2159.9	0.00	0.00	0.00	0.00	

Targets

Name	Descripti Dip.	on Dir.	TVD ft	+N/-S ft	+ E/-W ft	Map Northing ft	Map Easting ft	< Latitude> Deg Min Sec	< Longitude> Deg Min Sec
	FS & 1980' FE (330x330) irget	17-4	5696.0	-1620.0	1051.0	170566.061	877427.62	38 48 2.888 N	111 55 48.145 W

Casing Points

MD ft	TVD	Diameter	Hole Size	Name	
11	11.	in	in		
80.0	80.0	20.000	26.000	20*	
600.1	600.0	16.000	17.500	16 "	
2583.1	2500.0	13.375	14.750	13 3/8"	
5881.9	5500.0	9.625	12.250	9 5/8"	
6972.3	6550.0	7.000	8.500	7"	

Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
5773.4	5400.0	Twin Creek		0.00	0.00

EXACT Engineering, Inc. 415 S. Boston Ave., Suite 734 Tulsa, Oklahoma 74103 EXACT Engineering, Inc.

Steven R. Hash, P.E.

office 918.599.9400 office fax 918.599.9401

Steve 24/7 & mobil 918,599.9801 stevehash@exactengineering.com

E X					
To:	Al McKee (BLM)	Dustin Doucet (UDOG	From:	Steve Hash (EXACT)	
Faxi	(801) 539-4200	(801) 359-3940	Pages:	2 total	
Phone:	(801) 539-4045	(801) 588-5281	Date:	Dec 22, 2004	
Rei	Wolverine Federa	#17-4 API# 43-041-3003	5 CC:		

Dear Mr McKee & Mr Doucet,

Please be aware that BLM Sundry Notice in triplicate, (form 3160-5) is being mailed to your office today to 1) move surface location and 2) revise drilling, casing and cement program for the subject well. These proposed changes are identical to those recently approved on the Wolverine Federal 17-3 well. The complete package will include sundry notice, drilling prognosis incl BOP plats, directional plan & revised survey plat. Please call if further questions or concerns. Thanks for you cooperation.

Regards, Steve Hash

RECEIVED

DEC 2 3 2004

DIV. OF OIL, GAS & MINING

Form 3160-5 (April 2004)

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

FORM APPROVED

UTU-73528

	Expires	: March 31, 2	20
Lagra Serie	l No		

6. If Indian, Allottee or Tribe Name

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

				i	
SUBMIT IN TR	IPLICATE- Other inst	ructions on rever	se side.		CA/Agreement, Name and/or No. ne Fed Exploration Unit
Oil Well	Gas Well Other	<u> </u>	<u>UENTIAL</u>	8. Well Nam	
2. Name of Operator Wolverine G	as & Oil Co of Utah, LLC			Wolveri 9. API Wel	ne Federal #17-4 l No.
3a. Address One Riverfront Plaza, 55 Cam	pau NW, Grand Rapids, MI	3b. Phone No. (include 616-458-1150	area code)	43-041-3	
4. Location of Well (Footage, Sec.,	T., R., M., or Survey Description)	_1		Covenar	
SHL: 1736' FNL & 2298' FW BHL: 1980' FSL & 1980' FEL				11. County of Sevier C	r Parish, State Co, UT
12. CHECK AF	PPROPRIATE BOX(ES) TO	INDICATE NATUR	E OF NOTICE, RE	EPORT, OR	OTHER DATA
TYPE OF SUBMISSION		TYP	E OF ACTION		
Notice of Intent Subsequent Report Final Abandonment Notice	Acidize Alter Casing Casing Repair Change Plans Convert to Injection	Deepen Fracture Treat New Construction Plug and Abandon Plug Back	Production (Star Reclamation Recomplete Temporarily Aba Water Disposal	, [Water Shut-Off Well Integrity Other move sur loc 56' N & 49' W from permited spot
 Describe Proposed or Complete If the proposal is to deepen direct 	ed Operation (clearly state all perti-	nent details, including estin	nated starting date of any	y proposed work	k and approximate duration thereof.

Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Permission is requested for the following:

- 1) amend location spot FROM: 1736' FNL & 2298' FWL TO: 1680' FNL & 2249' FWL
- 2) amend drilling & casing program as outlined in the attached Drilling Prognosis (reference Ver4 2004.12.22)

PLEASE MAINTAIN ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL - thank you

14. I hereby certify that the foregoing is true and correct Name (Printed/Typed)			
Steven R Hash - EXACT Engine ring Inc	Title Consultin	g Engineer (918) 599-9400	
Signature Fluen R. Harl	Date.	12/22/2004	
THIS SPACE FOR FEDERA	AL OR STATE	OFFICE USE	
Approved by	Title	Date	
Conditions of approval, if any, are attached. Approval of this notice does not wan certify that the applicant holds legal or equitable title to those rights in the subject which would entitle the applicant to conduct operations thereon.			

States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

DEC 2 / 2004

(Instructions on page 2)

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

	5. LEASE DESIGNATION AND SERIAL NUMBER: FEE UTU-73528
SUNDRY NOTICES AND REPORTS ON WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	or to 7. UNIT or CA AGREEMENT NAME: Wolverine Fed Exploration Unit
1. TYPE OF WELL OIL WELL GAS WELL OTHER Drilling Well	8. WELL NAME and NUMBER:
2. NAME OF OPERATOR:	Wolverine Federal #17-4 9. API NUMBER:
Wolverine Gas and Oil Company of Utah, LLC 3. ADDRESS OF OPERATOR:	4304130035
55 Campau, NW Grand Rapids STATE MI ZIP 49203 PHONE NUMBER: (616) 458-115	10. FIELD AND POOL, OR WILDCAT: Covenant Field
FOOTAGES AT SURFACE: 1679' FNL & 2396' FWL 1680 2349 QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: NWSE 17 23S 1W	COUNTY: Sevier
	UTAH
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, R	EPORT, OR OTHER DATA
TYPE OF SUBMISSION TYPE OF ACTION	
NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: 12/22/2004 CHANGE TO PREVIOUS PLANS CHANGE TUBING CHANGE TUBING CHANGE TUBING CHANGE WELL NAME PLUG AND ABANDON CHANGE WELL STATUS PRODUCTION (START/RESUME) COMMINGLE PRODUCING FORMATIONS RECLAMATION OF WELL SITE CONVERT WELL TYPE RECOMPLETE - DIFFERENT FORMATIONS	REPERFORATE CURRENT FORMATION SIDETRACK TO REPAIR WELL TEMPORARILY ABANDON TUBING REPAIR VENT OR FLARE WATER DISPOSAL WATER SHUT-OFF OTHER: MOVE SURF JOCK
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths,	
Anion is Necessary	## Supplementation 12.22) ## ## ## ## ## ## ## ## ## ## ## ## ##
	ngineer (918) 599-9400
SIGNATURE Selven K. Harl DATE 12/22/2004	· · · · · · · · · · · · · · · · · · ·
his space for State use only)	BECEIVI

RECEIVED DEC 2 / 2004



EXACT Engineering, Inc. 415 S. Boston Ave., Suite 734 Tulsa, Oklahoma 74103

EXACT Engineering, Inc.

www.exactengineering.com

Steven R. Hash, P.E.

office office fax

918.599.9400 918.599.9401 Steve 24/7 & mobil 918.599.9801 stevehash@exactengineering.com

Feb c			\		
То:	Al McKee (BLM)	Dustin Doucet (UDOGM)	From:	Steve Hash (EXACT)	
Fax:	(801) 539-4200	(801) 359-3940	Pages:	2 total	
Phone:	(801) 539-4045	(801) 538-5281	Date:	Dec 22, 2004	
Re:	Wolverine Federa	I#17-4-API#43-041-30035	CC:		

Dear Mr McKee & Mr Doucet,

Please be aware that BLM Sundry Notice in triplicate, (form 3160-5) is being mailed to your office today to 1) move surface location and 2) revise drilling, casing and cement program for the subject well. These proposed changes are identical to those recently approved on the Wolverine Federal 17-3 well. The complete package will include sundry notice, drilling prognosis incl BOP plats, directional plan & revised survey plat. Please call if further questions or concerns. Thanks for you cooperation.

Regards, Steve Hash

> RECEIVED DEC 2 / 2004

DIV. OF OIL, GAS & MINING

1







WOLVERINE GAS AND OIL COMPANY

of Utah, LLC

Energy Exploration in Partnership with the Environment

January 31, 2005

T. 335, R.IW, S. 17

State of Utah Division of Oil, Gas & Mining 1594 West North Temple Suite 1210 Salt Lake City, UT 84114-5801

Via Fax (801) 359-3940

Re:

Approved APDs

Wolverine Federal 17-4

To Whom It May Concern:

Wolverine Gas and Oil Corporation of Utah, as operator of the captioned well (API Nos. 43-041-30035), hereby requests copies of the approved Applications to Drill with any conditions for approval for said wells. Please fax them to my attention at (616) 458-0869.

If you have any questions or concerns, please feel free to contact me.

Very truly,

andofst Helene Bardolph

RECEIVED

JAN 3 1 2805

DIV. OF OIL, GAS & MINING

Form 3160-5 (April 2004)

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

01

FORM APPROVED OM B No. 1004-0137 Expires: March 31, 2007

5.	Lease Serial No.
	UTU-73528
-	If Indian Allottes on Tribe Name

SUNDRY	NOTICES AND RE	PORTS ON WELLS	UTU-73528	
Do not use to	his form for proposals	to drill or to re-enter an (APD) for such proposals.	6. If Indian, Allottee or Tr	ibe Name
SUBMIT IN TR	IPLICATE- Other inst	ructions on reverse side.	7. If Unit or CA/Agreemer	•
1. Type of Well Oil Well	Gas Well Other		Wolverine Fed Expl 8. Well Name and No.	oration Unit
2. Name of Operator Wolverine C	Gas & Oil Co of Utah, LLC		Wolverine Federal #	¥17-4
3a. Address		9. API Well No. 43-041-30035		
One Riverfront Plaza, 55 Cam 4. Location of Well (Footage, Sec.,		10. Field and Pool, or Expl Exploratory	oratory Area	
1680 3349 SHL: 173 6' FNL & 229 8' FW	L		11. County or Parish, State	e
BHL: 1980' FSL & 1980' FEI	T. 235, R. IN	V.S.17	Sevier Co, UT	
12. CHECK A	PPROPRIATE BOX(ES) TO	INDICATE NATURE OF NOT	ICE, REPORT, OR OTHER DA	ATA
TYPE OF SUBMISSION		TYPE OF ACT	ION	
Attach the Bond under which the following completion of the investing has been completed. Fit determined that the site is ready Permission is requested to Surface Csg>>> FR: 16" diverter; cmt to surf with if reqd Protection Csg>>> FR: 5	ctionally or recomplete horizontally the work will be performed or provivalved operations. If the operation and Abandonment Notices shall be a for final inspection.) amend approved drilling & cannot be seen approved drilling	Fracture Treat Reclan New Construction Plug and Abandon Plug Back Mater Phug Back Water Ment details, including estimated starting y, give subsurface locations and measured the Bond No. on file with BLM/BIA results in a multiple completion or reconfiled only after all requirements, including asing program (ver4 2004.12.22) as resh mud system TO: 13-3/8" 68pp pg;1.97 yld) plus 350 sx tail Prem Co. 100 (csg pt in Arapien) in salt mud.	plete Other Other Disposal date of any proposed work and approximate and true vertical depths of all pertinent. Required subsequent reports shall be finpletion in a new interval, a Form 3160-ing reclamation, have been completed, and follows: new version to be (ver5 20 of J55 BTC @ 0-2700' in salt mud strength of J55 BTC @	mate duration thereof. It markers and zones. Iled within 30 days 4 shall be filed once d the operator has 005.01.24) It was using 20" 2M urface, top out cmt
Production Csg>>> FR: 5		70' TO: either 5-1/2" 17ppf N80)	LTC or 7" 26ppf N80 LTC @ 0-69'	70' in salt mud
PLEASE MAINTAIN ALI	L INFORMATION CONTAIN	VED HEREIN CONFIDENTIAL -	thank you	
		2-4-05)) A	JAN 2 6 2005
14. I hereby certify that the foreg	going is true and correct		*	DIV OF OU CASE A

DIV. OF OIL, CAS & MINING Name (Printed/Typed) Steven R Hash - EXACT Engineering Inc Title Consulting Engineer (918) 599-9400 01/24/2005 Date THIS SPACE FOR FEDERAL OR STATEMENT TO Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject least which would entitle the applicant to conduct. ederal Approval Of This Date Action Is Necessary Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly States any false, fictitious or fraudulent statements or representations as to any matter within its hursteric department or agency of the United

(Instructions on page 2)



K

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES

RECEIVED FORM 6 FEB 0 1 2005

013

DIVISION OF OIL, GAS AND MINING

	DIV. OF OIL GAC O LIBERTY
ENTITY ACTION FORM	DIV. OF OIL, GAS & MINING

Operator:

Wolverine Gas and Oil Company of Utah, LLC

Operator Account Number: N 1655

55 Campau NW, One Riverfront Plaza

Address:

Phone Number: (616) 458-1150

city Grand Rapids

zip 49503-2616 state MI

9/1 1			100	Δ	7	Rng	County
API Number	Well Name Wolverine Federal 17-4		QQ	Sec	Twp	Kity	Oblifty
4304130035			NWSE	17	23\$	1W	Sevier
Action Code	Current Entity Number	New Entity Number	s			ity Assignment Mective Date	
& A	99999	14559	1	/31/200)5		

Comments:

NAVA BOTTOM Hole NOT IN Unit PA.

CONFIDENTIAL

API Number	r Well Name		QQ	Sec_	Twp	Rng	County
Action Code	Current Entity Number	New Entity Nµmber	Spud Date		Entity Assignment Effective Date		
omments:		<u> </u>				<u> </u>	

API Number We		API Number	Well Name		QQ	Sec	Twp	Rng	County
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date				
omments:									

ACTION CODES:

- A Establish new entity for new well (single well only)
- B Add new well to existing entity (group or unit well)
- C Re-assign well from one existing entity to another existing entity
- D Re-assign well from one existing entity to a new entity
- Other (Explain in 'comments' section)

Steven R Hash - Consulting Engineer

Signature

EXACT (918) 599-9400

2/1/2005

Title

Date

(5/2000)

Form 3160-5 (April 2004)

015

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

FORM APPROVED OM B No. 1004-0137 Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS				115	5. Losse Serial No UTU-7352H		
Do not use ti	nis form for proposals ell. Use Form 3160 - 3	to drill or	to re-	enter an	6. It Inchar	n, Allottee or Tribe Name	
SUBMIT IN TR	IPLICATE- Other ins	tructions o	n reve	rse side.	7. If Unit or CA/Agreement, Name and/or No.		
Type of Well Oil Well	☐Gas Well ☐Other	CATALON AND AND AND AND AND AND AND AND	******	To a company of the second sec	Wolve	rine Fed Exploration Unit	
<u> </u>		A first and desire for a contract a paragraph of	er til Mently day samet den	received the partition of dates and the second	8. Well Na Wolver	me and No rine Federal #17-4	
2. Name of Operator Wolverine G	as & Oil Co of Utah, LLC		ente minero es		9 API W	ell No.	
3a Address One Riverfront Plaza, 55 Cam	pau NW, Grand Rapids, MI	3b. Phone N 616-458-		kranca vodej		-340035 nd Pool, or Exploratory Area	
4. Location of Well (Footage, Sec.,	T. R. M. or Survey Description	,	manufacture of the second	CONTRACTOR OF THE STATE OF THE	Explor		
SHL: 1680' FNL & 2249' FW BHL: 1980' FSL & 1980' FEE						or Parish, State Co. UT	
12. CHECK A	PPROPRIATE BOX(ES) T	O INDICATE	NATU	RE OF NOTICE,	REPORT, OF	R OTHER DATA	
TYPE OF SUBMISSION			, married to a super	PE OF ACTION	er e karr salakangan pagamengangan kara yang	alter dan maar in trouble ee' e' engel 'n verke ee's teken van van valuur, e' ja jak jis	
The state of the s	Acidize	Deepen	Capital Commission (Capital September 2)	Production	(Start/Resume)	Water Shut-Off	
Notice of Intent	Alter Casing	Fracture 1		Reclamation	n	Well Integrity	
Subsequent Report	Casing Repair Change Plans	New Cons		Recomplete		Other (Other procession of the second continuous and the second contin	
Final Abandonment Notice	Convert to Injection	Plug and / Plug Back		Water Disp		Mary and control and proper as applicable and a constant control or a summary control of the control of control of	
was 464' south and 678' er sx of Premium cmt (17pp)	illing of the 12-1/4" intermed VD tools which could not arr ast of the SHL at an angle of	est both the an 46,8 deg and a: 3, too of cmt fo	gic bulk cimuth c and at 2	for direction due of 97.3. The well v 390' sidetracked	to steeply dippin vas plugged back with 2-1/2 day di	iation. This portion of the welling formations. The BHL at 3278' con February 19, 2005 with 550 irectional assy by time drilling at	
	L INFORMATION CONTA					RECEIVED	
		-01151	חרו	ITIAI		FEB 2 4 2005	
xc: UDOGM		CONFI	UEI	VIIAL	Di	V. OF OIL, GAS & MINING	
14. Thereby certify that the fore Name (Printed/Typed)	going is true and correct	regional file to the planting as all two standard regions of the standard regions are the standard regions of the standard regions are the standard regions of the standard regions.			entremaken, met er die Louis verges deutsche eine seinsche die geben die Volume – der Schen von der zur gelegt beginnte der einem gelegtene d		
Steven R Hash -	EXACT Engineering Inc	The second secon	Tule (onsulting Engine	er (918) 599-9400	B	
Signature Sthee	12. Hach		Date		02/20/2005		
and the state of t	THIS SPACE FOR	FEDERAL	ORS	TATE OFFIC	CE USE	The second secon	
Approved by	e e e e e e e e e e e e e e e e e e e		Ī	itle		The second secon	
Conditions of approval, if any, are a certify that the applicant holds legal which would entitle the applicant to	or equitable title to those rights	does not warrar in the subject lea	nt or	Office		Sale:	
ful. With the end of the same	The second secon					history registrating and a comparison of contract and a second of the contract and the cont	

Fitle IR U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. (Instructions on page 2)

Form: 3160-5 (April 2004)

014

UNITED STATES DEPARTMENT OF THE INTERIOR

- 80	KM APPROVED	
- 08	B No. 1004-0137	
Exp	res: March 31, 20	Ů,

SUNDRY Do not use the abandoned we	NOTICES AND RE Sis form for proposals all. Use Form 3160-3 IPLICATE- Other ins	EPORTS ON W to drill or to re (APD) for such p	-enter an Proposals.	7. If Onit or	
Oil Well	Gas Well Other		erren min som anna dan rekulu voti rekatan gerkun yerine biliya yerikan k	8. Well Na	
2. Name of Operator Wolverine G	as & Off Co of Utah, LLC			9 API We	ine Federal #17-4 Il No
la Address One Riverfront Plaza, 55 Cam	nau NW. Grand Ranids. Mt	3h Phone No. (inch 616-458-1150	ide area code)	43-041	Participant and an analysis decoration and an incompanies are properly by the property of the property of the
4. Location of Well (Findage, Sec.,	expended words authority companions with the state of the particle of community conjugate as, a	and a second of the second	Contraction to the property of the second and appropriate of the contraction of the second contr	Explor	d Pool, or Exploratory Area atory
SHL: 1680' FNL & 2249' FW BHL: 1980' FSL & 1980' FEL				11. County Sevier	or Parish, State Co, UT
12. CHECK A	PROPRIATE BOX(ES) TO	O INDICATE NATI	TRE OF NOTICE,	REPORT, OF	OTHER DATA
TYPE OF SUBMISSION	The state of the s	Т	YPE OF ACTION		
Notice of Intent	Acidize Alter Casing	Deepen Fracture Treat	Reclamation	Start/Resume)	Water Shut-Off Well Integrity
Subsequent Report	Casing Repair Change Plans	New Construction Plug and Abandor		Ahandon	L_Other
Final Abandonment Notice	Convert to Injection	Plug Back	☐ Water Dispos		in the field of the second of
testing has been completed. Fit determined that the site is reach. On February 10, 2005, dri with 650 sx of CBM lite or run to 100' and cement cir. This was a departure from 2005. The reason for this	nai Abandonment Notices shall be for final inspection.) liting of the 17-1/2" surface be ment plus 470 sx of Premius culated after 25 sx pumped;	ic filed only after all requirole was suspended at in. There was full circ 25 sx were circulated thing depth of 2700'.	rements, including reck 2127' and 13-3/8'' 64 ulation but cement d to the pit. UDOGM Verbal permission weasing seat had been	amation, have bee hppf J55 BTC w lid not reach the I inspector Mar as granted by A encountered,	La Form 3160-4 shall be filed once in completed, and the operator has say run and cemented to surface aurface initially. 1" pipe was k Jones witnessed the procedure. I McKee via email dated Feb 10,
14 Thereby certify that the fore	going it true and corract	er al en l'anne d'anne de l'anne de de l'anne de l Anne de l'anne de l'a	de Garandinophision (Maria III) and traigene frequency (III) and III and III and III and III and III and III a The PROTECTION of the Control of the Control of the III and III	UUINI	IDFILITION
Name (Printed/Typed)	EXACT Engineering Inc		Committee Dogs	0.10. 200	
Signature State	17 I		Consulting Engineer)
	THIS SPACE FOR	FEDERAL OR	STATE OFFIC	02/20/2005 E 118E	
		The second secon	CALL OFFICE	LUGE	
Approved by Conditions of approval, if any, are a	utached. Approval of this notice	e does not warrant or	Litle	I	Dales: Total (1985) (1985) (1985) (1985) (1985) (1985) (1985) (1985) (1985) (1985) (1985) (1985) (1985) (1985) (1985)
certify that the applicant holds legal which would entitle the applicant to	or equitable title to those rights	in the subject lease	Office		

Title B U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

EXACT Engineering, Inc.

www.exactengineering.com

415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

Steven R. Hash. P.E. Registered Professional Engineer stevehash@exactengineering.com

CONFIDENTIAL PLEASE!

February 20, 2005

Mr. Dustin Doucet Utah Division of Oil, Gas & Mining 1594 West North Temple, Suite 1210 Salt Lake City, UT 84114-5801

Re:

Wolverine Federal 17-4 well

Sec 17 T23S R01W Sevier Co., UT API# 43-041-30035

Dear Mr. Doucet.

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed daily drilling reports for the subject well from inception January 26, 2005 (spud Jan 31, 2005) through February 19, 2005. Our present status is sidetracking at 2440'. We respectfully request that the enclosed information remain confidential

Very Truly Yours,

Consulting Engineer for Wolverine Gas and Oil Company of Utah, LLC

copy without enclosures via email to:

Wolverine Gas & Oil Co of Utah, LLC: Richard Moritz, Sue Benson

EXACT Engineering, Inc.

well file

			Engin	eerina	& Sur	pervisio	n 4		EX	(AC	ΓEn	air	nee	rin	g, Inc.	,				18) 5	99-9400)	<u>u</u>	
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	/2" Bi	IOLE ASS	SEMBLY	 	1.50 Rig No Unit 111 10.00 Cell Nerren 918-645 80.00 Last BOP Test																		
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		' SWD		+	1.50 Rig No Unit 11 110.00 Cell Norren 918-4 180.00 Last BOP Test															7,0-0	10-0011		
5 -	5" S	WDP		110.00 Cell Norren 918-64 180.00 Last BOP Test																			
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	al BH		HA WT.	441 PUW	.50	SO WT.	ROT. TO	RQUE	GRD. ELE	VATIO	N G	L TO KB	<u> </u>	KB ELEVA	TION'	INTERMEDIA	ATE CS	_		Operate	Ann		1/31 ASING
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	\dashv			 	ļ	ļ		<u> </u>	MV				<u> </u>				<u> </u>						MWD
	<u> </u>				<u> </u>	<u> </u>	<u> </u>	<u> </u>	MV	VD		<u> </u>	<u> </u>				<u> </u>		<u> </u>				MWD
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DATE		ľ	WELL				CONTRAC					- 1		TY, STATE	SPUD DATE		AP#		_	SUP	ERVIS		
	2/01/ F/SPU			Verine F				TOTA	nit Rig	#11		GRESS	Sev	rier, UT	1/31/05 NG TIME	43-04 ROP			5 ATION			ren Na . DEPTH	ylor
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PU	4	MANUFA	CTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GF	M A	/ DP	AV DC	PUMP PRESS.		MTR DIFF PRESS.	HH	2 / IN ²	EC	D	-	60	spm	80 spm	100 spm
1		Nati	onal	6 1/4	8.5	3.23	125	40)4	_		7 11200	+	PALOO.	 	***************************************		ᅦ	1	+			
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Во	th					6.46	250	80)8 (65	75	1400		150									
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	/2" B	IOLE ASS it	SEMBLY		NGTH O.D. I.D. FORMATION MID TVD LITHOLOGY RIG INFO																		
		al Asse	embly	-	1.50 Rig No Unit 111 110.00 Cell Narren 918-645-6 180.00 Last BOP Test																		
6 -	6 5/8	' SWD	P	180	1.50 Rig No Unit 111 110.00 Cell Nurren 918-645-6 180.00 Last BOP Test																		
16	- 5"	SWDF	>	480	110.00 Cell Nurren 918-645-6 180.00 Last BOP Test																		
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М	5 T	INCL.	AZIMUTI	TVĎ	SECTION	N+/S-	E+ / W-	DI	LS T	OOL	MD	URVE	rs T	AZIMUTH	T	VD	SECT	rion .	N+/5	. F+	/W-	DLS	TOOL
19	1	0.60	41.60		-0.25	0.75	0.66	0.		WD	617	2.30		255.00	1	17	-14		10.5		.91	4.50	MWD
49	5	3.10	305.10	495	-9.30	7.97	-4.83	1.	80 M	WD	708	4.10		198.40	7	08	-12	.74	6.9°	1 -12	2.54	3.27	MWD
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Operat	or:	Wolverin	6&O C	o of Utah	, LLC		D/	AILY	YC	RIL	L	ING	REP	OR	?T		24 hr	s - n	nidr		t to mic		
DATE 02/0	2/05	WELL	verine F	ederal	17-4	CONTRAC		nit Rig	#11	11		ı	OUNTY, STATI evier, UT	- 1	1/31/05	43-0	AP# 41-3		5	·	SUPERVI	rren N	lavlor
DAYS F/S	מטפ		T OPERATION	ONS @ MID	NIGHT	L, .,		L DEPTH	1		ROGR	ESS		RILLING	G TIME	ROP		FOR	MATIC		AUT	H. DEPT	H
	3	<u> </u>	<u> </u>	rip for b	ort			97	5			206 DATA		19.5	50	10.6			Araj	pier	1	69	50
WT		VIS.	WL	C	K F	ч	SAND		SOLIDS		PV	YP		3	DEPTH	DATE/TIME	CHI	ORIDI	ES	С	ALCIUM	MBT	SALT PPM
10.0		34	n/c	2/	32 9	.0	0.50		3.7		6	5	3/5	<u> </u>	495	2/1/9:07	14	0,00	0	Ŀ	1880	2.0	231,000
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16 - 5	" SWD	P	480	0.00				BOTTON	AS UP	TIME	BG (GAS	GAS DA	NN GA	AS	TRIP	GAS				OP Tes		
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Total string				1.50															La	st O	perate /	Annula	1/31
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MD	INCL.	AZIMUTH	TVD	SECTION	N+/S-	E+/W-	DŁ	s T	OOL	MD	T	INCL.	AZIMUTH			סע	SEC	TION	N+	/8-	E+/W-	DLS	TOOL
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	<u> </u>	Engir	eering	& Su	pervisio	on 📶		EXAC	T	Enç	jine	eriı	ng, Inc	•			(91	18) 59	9-9400		
Operat	tor: 1	Wolverin-											REPO			24 hrs	<u> </u>		t to mic	dniaht	
DATE		WELL				CONTRAC	CTOR				T	COUN	TY, STATE	SPUD DATE		AP#	-		SUPERVI	SOR	
02/0	3/05 PUD		verine F			<u> </u>		it Rig #1	111		GRESS	Sev	rier, UT	1/31/05 NG TIME	43-0 ROP	41-3		5 MATION		teve H	
į	4	FILES		Drillin			IUIAL.	1,105		1500	129)	1	6.00	8.1	1		rapier	l i	69:	
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BIT SI	ŻÉ M	IFG.	TYPE	IADC	SERIAL	NO.	JET!	S (1/32nd")			IT DA	OUT	FOOTAGE	HOURS	ROP		MTR	RPM	WOB	DULL	CONDITION
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							н	YDRAUL	ICS	\$			-1				ī		SLOW	V PUMP	5
PUMP NO.	MANUF	ACTURER	LINER	STROK	1	SPM	GPM	AV DP	· T /	AV DC	PUMF		MTR DIFF PRESS.	нн	P/IN ²	EC	D		60 spm	80 spn	n 100 spm
1	Na	tional	6 1/4	8.5	3.23	125	404		+		PRESC	-	PRESS.	<u> </u>		 	-			-	
2		tional	6 1/4	8.5	3.23	125	404		t			1	1	<u> </u>	······································		1	2		 	1
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			RILL ST				丁						GEOLOGIC				Ī		GENER		·O
17 1/2"	MHOLE AS Bit	SEMBLY	LENGT	гн 1.40	0.D. 17.500	LD.	$-\parallel$	FORMATI	ION	+	MD	7	TVD		LITHOL	OGY	-	ria Na		INFO	
	onal Ass	sembly		7.20	2.813	 	\neg			+-		+-						Rig No Cell No		Unit 11	11 -629-9801
6 - 65	/8" SWI	DP	183	3.58	2.813							T							OP Tes		1
16 - 5	" SWD	P	752	2.54	3.125		B	OTTOMS U	PTIM	AE B	G GAS	\equiv	GAS DATA CONN C	SAS .	TRIPO	AS		Next B	OP Tes	it	
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Total I			1,054							+		+				····			perate /		
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55,5			100,0	00 1	00,000	300		5,736	<u>, </u>		17 URVE	<u>Vē</u>	5,75	3				20 (<u>)</u> 121	13-3/8	" @ 2700
MiD	INCL.	AZIMUTH	TVD	SECTIO	N N+/S-	E+/W-	DLS	TOOL		MD	INCL		AZIMUTH	Тт	VD	SECT	ION	N+/S-	E+/W-	DLS	TOOL
1,005		143.70		23.53			3.13														
1,067	13.00	137.40	1062	37.10	41.02	5.53	2.39	MWE				<u></u>	· · · · · · · · · · · · · · · · · · ·						L	<u> </u>	<u> </u>
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Operator	: W	Volverine	G&O Co	of Uta	ah, LLC	······	Б	AILY	/ D	RIL	LIN	3 F	REPOR	₹T	2	4 hrs	- mi	dnigh	t to mi	dnig	ht	
ATE		WELL	******	•		CONTRA			•				TY, STATE	SPUD DATE		AP#			SUPERV			
02/04/0 AYS F/ SPUE			Verine F			L		nit Rig	#11		OGRESS	Sev	ier, UT	1/31/05 IG TIME	43-0- ROP	41-30	035			TH. DE		sh
5 ATS F/ SPUL		PRESENT		ns @ m Drillin			101	1,34	ın.		235			.00	9.8	ľ		rapier	1		6950)
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2 17.50	-		GS5H		MJ38	20	20	20	20) 4	97 9	76	479	35.00	13.7		Y	160	40	6	6	l
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	MANUFA	CTURER	LINER	STROK	i	SPM	G	PM AV	/ DP	AV DC	PUMP		MTR DIFF	HHI	/ IN ²	ECD	,]		60 spn	n 80	spm	100 sp
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		D	RILL ST	RING							<u> </u>		EOLOGIC	:					GENE	RAL	INFO	,
воттомно	OLE AS	SEMBLY	LENGT	н	O.D.	1,1).	FORM	MATION		MD	T	TVD		LITHOL	OGY	士			G INFO		
7 1/2" Bit			1	.40	17.500					_		1					_	Rig No)		it 111	
Directiona			117		2.813	 		<u> </u>	····			1_					-		Steve		18-6	29-980
- 6 5/8"			183		2.813	+		ļ				<u></u>	GAS DATA		L				OP Te			
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			Engin	eering	& Sur	ervisio	n 🚄		EXA	СТ	Enc	ine	eri	ng, Inc.	· · · · · · · · · · · · · · · · · · ·			(91	8) 59:	9-9400		
Ope	rato			G&O Co	<u>-</u> _									REPOI			24 hre	·		t to mid	niaht	
DATE	alu	·	WELL.	G&O CO	OI OTAL	i, LLC	CONTRAC		\(\L_1					NTY, STATE	SPUD DATE		AP#	- 111	lariigi	SUPERVIS		
	/05/			verine F					nit Rig #	#11°				vier, UT	1/31/05		41-30				eve Ha	
DAYS	F/SPL 6	JD.	PRESENT	OPERATIO	NS @ MIC Drilling			TOTAI	1.467	,	PRO	GRESS 127			NG TIME .00	7.5	[ATION L rapie r		4. DEPTH	
	<u> </u>			<u> </u>	Ornario			<u> </u>	1,407			JD D/				7.5			apici			
	VT		VIS.	WL	(ж Р	н	SAND	\$0	LIDS 9		v	Ϋ́P	GELS	DEPTH	DATE/TIME	CHLC	RIDE	s c	ALCIUM	OIL S	ALT PPM
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	7.50			GS5H		MJ38	20 :	20	20	20) 4	97	976	479	35.00	13.7		Y	160	40	6 6	
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PUM	p I	MANUFA	CTURER	LINER	STROKE	GAL/STK	SPM	GPI	M AVE	-	AV DC	PUM	ρĺ	MTR DIFF	I нн	P/IN ²	ECD	+			PUMP 80 spm	100 spm
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Bot	<u> </u>					6.46	250	80	8 65		75	140		150	<u> </u>		<u> </u>					
BO ¹	TOM	Bit 1.40 17.500 Arapien Shale Anhy, Lm Rig No Unit 111																				
	BOTTOMHOLE ASSEMBLY LENGTH O.D. LD. FORMATION MD TVD LITHOLOGY RIG INFO 7 1/2" Bit 1.40 17.500 Arapien Shale. Anhy, Lm Rig No Unit 111 Directional Assembly 117.20 2.813 Cell Nc Steve 918-629-9801																					
Direc	BOTTOMHOLE ASSEMBLY LENGTH O.D. I.D. FORMATION MD TVD LITHOLOGY RIG INFO 17 1/2" Bit 1.40 17.500 Arapien Shale. Anhy, Lm Rig No Unit 111 Directional Assembly 117.20 2.813 Cell Nc Steve 918-629-980															329-9801						
17 1/2" Bit 1.40 17.500 Arapien Shale, Anhy, Lm Rig No Unit 111 Directional Assembly 117.20 2.813 Cell Nc Steve 918-629-980 6 - 6 5/8" SWDP 183.58 2.813 Last BOP Test																						
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3 - 5	. HA	VDP			.75		-				L_		i	SHOWS	*	<u> </u>		-		afety Me	eting	2/4
Jars 4 - 5	' HV	VDP		32 118	.61 .76			\dashv	GAS U	NITS		FROM	-	10		ROP (F	(HR)			OP Drill	line De	J
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	,000		0,000	105,00	JO 1 8	90,000	300		5,7	30		17		5,75	3	l.			20" (@ 121	13-3/8	@ 2700
MO	Т	INCL.	AZIMUTH	TVD	N+/S-	E+/W-	SECTION	DL	в тос	DL II	MD	URVE		AZIMUTH	T	VD	SECTI	ON	N+/S-	E+/W-	DLS	TOOL
1,31		11.80	128.30		-72.54		83.06	0.9								***************************************						
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Dail	у То	tal	24.00										*********								************	

()	, Ei	ngine	ering	& Su	pervisio	n t							g, Inc.				(918)	599	-9400			
perator:	: Wolv	erine (G&O Co	of Uta	th, LLC		DA	ILY	DF	RILI	LING	3 R	EPOF		2		- midi	nigh	to mid		t	
TE CONTRACTOR	WEL				1474	CONTRAC		ii Dia i	4444				Y, STATE	1/31/05	43.0	ари 41-30(125		SUPERVIS		Hash	
02/06/0 AYS F/ SPUD			PERATIO			L	TOTAL	It Rig #	FILI	PRO	GRESS	Sevi	er, UT DRILLIN	I/3 I/05	ROP		ORMATI	ON ON		H. DEF		
7				Drillin	9			1,637	,		170		23.	.50	7.2		Ara	pien		6	950	
										M	JD DAT	Α										
WT	VIS		WL.				SAND		LIDS %			ΥP	GELS	DEPTH	DATE/TIME	CHLOF		_	ALCIUM	OIL	SALT	
9.8	39	<u>' </u>	n/c	1 2	2/32 9	.0	tr		4.3			27	14/22	1525	2/6/8am	108,	UUU		2520		178,	
IT SIZE	MFG.	T	YPE	IADÇ	SERIAL	NO.	JET	S (1/32nd")	В .	T DAT	A DUT	FOOTAGE	HOURS	ROP	M.	TR R	P M	WOB	DUI	L CON	4OITK
0.		-		CODE				or TFA		+.								MTR		T	В	G
1 17.500 2 17.500		+	63LT SS5H		5486 MJ38		0	8x15 20	20	+-		97	360 479	14.00 35.00	25.7 13.7		+	60 60	5 40	6	6	<u> </u>
RF 17.500		+	63LT		5486		-	8x15				003	27	6.00	4.5			60	30-45	2	2	<u> </u>
3 17.50		+	XR+C		MR41			1x18	1x22	-	03		634	74.50	8.5			+120			_	<u> </u>
	<u> </u>						H	YDRAL	JLICS	3				L					SLOW	/ PUI	MP	_
	ANUFACTU	IRER	LINER	STROK	1	SPM	GPM	AV	DP	AV DC	PUMP	T	MTR DIFF	ння) / IN ²	ECD	1		60 spm	80 s	pm 10)0 sp
NO. 1	Nationa	-	6 1/4	LENGTI	3.23	125	404	+	+		PRÉSS.	+-	PRESS.	<u> </u>		<u> </u>	+	1			+	
2	Nationa		6 1/4	8.5	3.23	125	404	- 	\dashv			+-	· · · · · ·			 -		2		 	+	
Both			1		6.46	250	808		5	75	1400	T	150		 		\parallel		L	<u> </u>		
		DF	RILL ST	RING			<u> </u>					G	EOLOGIC	· · · · · · · · · · · · · · · · · · ·			Ť		GENER	EALT	NFO	
воттомно		BLY	LENGT		O.D.	I.D.		FORMA	ATION	1	MD	F	TVD		LITHOL					INFO		
7 1/2" Bit				.40	17.500	 		Arap	pien	+		-			Shale. Anhy,	Lm		g No		Unit		
irectional		DIY	117 183		2.813 2.813	+	┪	····		+		╁		***************************************		·			Steve		8-629	-98
6 - 5" S			752		3.125	 	1	BOTTOMS	TIP TIE	<u> </u>	G GAS		GAS DATA	SAS	TRIP	SAS			OP Tes		_	
- 5" HW	DР		88	3.75		1						1		5/10					afety Mo		,	2/6
ars			32	2.61				GASU	INITS		FROM		SHOWS TO		ROP (F	T/HR)	La	st B	OP Drill			
- 5" HWI	DP		118	3.76	. ,												LE	st O	perate l	Pipe	Rar	
										-	······································	 				**********			perate l			
Total BH		WT.	1,294		SO WT.	ROT. TOP	QUE	GRD. ELE	VATIO	N G	L TO KB	┼	KB ELEV/	ATION	INTERMEDI	ATE CSG			perate /		ar EXT CA	1/31 SING
98,000	46,0	000	105,0	00	90,000	300		5,7	36		17		5,75	3				20" (121	13-3	3/8" @	270
				-			,			S	URVEY	8										
		36.00	1528	N+/S-		132.18	*****			MD	INCL.	+	AZIMUTH	7	VD	SECTIO	ON N	+/5-	E+/W-	DI	s	TOOL
1,639 1					-							╫			······································		+			1		
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) <u>K</u>	En	gineerii	ng & S	upe	rvisioi								g, Inc.			(;	978)	599	-9400		
Opera	tor:		rine G&O	Co of U	ltah,				LY	D	RIL	LIN		REPO		2		mid	lnigh	t to mic		
ATE 02/0	07/05	WELL	Volverin	e Eeder	ral 1	- 1	CONTRAC	TOR Unit	Dia:	#11 1				ier, UT	1/31/05	43-0	AP# 41-300	35		SUPERVIS	or eve H	eeh
AYS F/			ENT OPERA					TOTAL D		77		GRESS	361		NG TIME	ROP		RMAT	ION		1. DEPTI	
	8			Drilli	ing		[1,73	4		97		12	.00	8.1		Ara	apier		69	50
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9.7		vis. 36	- 	VL /C	2/3			sand tr	 	4.0		7	ΥP	13/21	DEPTH	DATE/TIME	CHLOR		+	ALCIUM 2520		74,90
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iT s	íZE	MFG.	TYPE	IAD	c	SERIAL N	Ю.	JETS	(1/32nd	l")			OUT	FOOTAGE	HOURS	ROP	MT	R F	RPM	WOB	DULL	ONDITI
10.			SC63L7	COE	Œ	E 4004	+		TFA	1			407		44.00	05.7	-+		+MTR		T B	+
	.500 .500	DPI SEC	MGS5H		\dashv	54869 MJ382			x15 20	20			497 976	360 479	14.00 35.00	25.7 13.7	Y	+-	160 160	5 40	2 2 6 6	
RF 17		DPI	SC63L1	 	+	5486			x15		_	-	1003	27	6.00	4.5	- ;	+	160	30-45	2 2	
3 17	7.50	SEC	STXR+0	٥		MR416	33 2x	28 1:	x18	1x2	2 10	03	1734	731	86.50	8.5	Y	40	+120	16-22	6 4	1
								HY	DRA(JLIC	s							T		SLOW	PUMI	,
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2	+	lational	6 1/			3.23	125	404	†	\dashv			\top				 	╫	2	<u> </u>		T
Both						6.46	250	808	6	5	75	1400	2	150				1				-
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		ASSEMBL	Y LEN	IGTH 40		D.D.	1.D.	-		ATION		MD		TVD		LITHOL		Ŧ		•	INFO	
7 1/2°		ssembl	, —	1.40	·, · · · ·	17.500 2.813		-	Ara	pien			+	. ,	· · · · · · · · · · · · · · · · · · ·	Shale. Anhy	, Lm	ᆌ	ig No		Unit 1	
	5/8" S\			83.58	-	2.813					_		+-				····	╌		Steve		629-9
	" SW	·		52.54		3.125		Bo	TTOMS	IT QU 2	MET E	G GAS		GAS DATA	SAS	TRIPO	AS	-		OP Tes		
3 - 5"	IWDF)		88.75																afety Me		2/
lars				32.61					GASI	UNITS		FROM		SHOWS TO		ROP (F	MR)	- L	ast B	OP Drill		
I - 5" I	IWDF		1	18.76				_ _					4_					L	ast O	perate F	ipe Ra	1
T-4-1	DI IA	·····	-	24.24									+			<u> </u>		-		perate f		
STRING	BHA:	BHA W7		94.84 WT.	SC	WT.	ROT. TOR	QUE G	RD. EL	EVATIO	ON G	L TO KB	\pm	KB ELEVA	ATION	INTERMEDI	ATE CSG			perate A		1/3
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												JRVE	YS	· · · · · · · · · · · · · · · · · · ·					•			
мо 1,543	10.7						132.18	DLS 1.26	+	ND Σ	MD 1.669	11.3		141.30		VD 351	N+/S- -123.3	_	+/W- 5.62	155.70	DLS 1.61	MV
	-		80 162							1	1,000	11.5	-	141.00	<u>'</u>	331	-123.3	4	J.02	133.70	1.01	IVIV
				*****							DAIL	YACT	IVITY	,	<u> </u>							
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Operat	or:	Wolverin	e G&O C	o of Uta	h, LLC		D	AIL	YC	RIL	LIN	G F	REPO	₹T	2	24 hrs -	midn	ight	to mid	nigh	t
DATE	0.00	WELL				CONTI	RACTOR						ITY, STATE	SPUD DATE	40.0	AP#		8	UPERVIS		
02/0			Iverine F					Init Ri			OGRESS		rier, UT	1/31/05	43-0 ROP	41-300	35 RMATIO	N L		EVE	Hash
9	9			Drilling	g			1,8	861		127	7	17	.50	7.3	ļ	Arap	oien		6	950
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WT		VIS.	WL		СК	PH	SAN		SOLIDS	%	PV	ΥP	GELS	DEPTH	DATE/TIME	CHLOR	IDES	ÇAL	LCIUM	OIL	SALT PPN
9.7		36	n/c	2	2/32 1	0.0	tr		4.0		7	21	13/21	1700	2/7/7am	106,	000	25	520		174,900
											IT DA										
BIT SI NO.	ZE N	AFG.	TYPE	CODE	SERIAI	L NO.	•	IETS (1/3: or TF/			IN	OUT	FOOTAGE	HOURS	ROP	MT	R RP		WOB		B G
1 17.	500 E	OPI S	C63LT		548	69		8x15	5	1	37	497	360	14.00	25.7	Y	16	0	5	2	2 1
2 17.	500 S	EC M	IGS5H		MJ3	820	20	20	2	20 4	97	976	479	35.00	13.7	Y	16	0	40	6	6 1
RF 17.	500 E	DPI S	C63LT		548	69		8x15	5	9	76	1003	27	6.00	4.5	У	16	0	30-45	2	2 1
3 17.	.50 S	EC S	TXR+C	L	MR4	163	2x28	1x18	3 1>	22 1	003	1734	731	86.50	8.5	<u></u>	40+	120	16-22	6	4 1
								HYDR	AULK										SLOW	PUN	AP
PUMP NO.	MANUF	ACTURER	LINER	STROKE		K SPN	G	PM .	AV DP	AV DC	PUM		MTR DIFF PRESS.	ння	7 / IN ²	ECD		- 6	60 spm	80 sp	om 100 s
1	Na	tional	6 1/4	8.5	3.23	125	5 4	04		 	FRES	3.	PRESS.		****		╂┼	+			+
2		tional	6 1/4	8.5	3.23	125		04			T	1									_
Both					6.46		-	08	65	75	140	0	150			 	1		•		<u> </u>
		1	RILL S	RING				Г					GEOLOGIC				'	G	ENER	AL II	(FO
	MHOLE A	SSEMBLY	LENGT	Ή	O.D.		.D.	FO	RMATIO	Ň	MD		TVD		LITHOL	OGY				INFO	
7 1/2"			†	.40	17.500			A	rapier	<u> </u>			·		Shale. Anhy,	, Lm	Rig	No		Unit	111
	nal Ass		118		2.81	+		 					,				-		Steve		8-629-98
	/8" SW " SWD		183	-	2.813	+							GAS DATA						P Test		
3 - 5" H		P	485	3.75	3.12	9		BOTTO	MS UP	TIME	BG GAS		CONN	AS	TRIP	AS			P Test		
lars	IVVDE	· · · · · · · · · · · · · · · · · · ·	·	2.61	·····	+							SHOWS				┨		fety Me	eting	2/8
4 - 5" H	WDP	····	118			 		₩ G	SUNITS	-	FROM	+	10		ROP (F1	/HR)	-	-	P Drill	lina E	,
		***				1				_		+-					1		erate P erate B		
Total I			1,028	3.76								 					-		erate A		
STRING		BHA WT.	PUW		SO WT.		ORQUE	1	ELEVAT	ION C	SL TO KE		KB ELEVA		INTERMEDI	ATE CSG	<i>'</i>	STCA	SING	NE	XT CASING
100,0	00	46,000	115,0	00 1	105,000	3	50	<u> </u>	5,736		17		5,75	3			1 20	0" @	121	13-3	/8" <u>@</u> 27
MD	INCL.	AZIMUTH	TVD	N+/S-	E+ / W-	SECTI	ON T	DLS	TOOL	S MD	URVE		AZIMUTH	7	VD	N+/S-	E+/	Ta	TOTION!	51.6	T 700
1,764	14.50				9 107.7				WD	- NO.	INCL		AZIMOTH	<u> </u>	VU	N+/5-		W- 8	SECTION	DLS	T00
1,827	17.90	143.00	1805	-154.1	6 117.8	8 193.	72 6	46 1	WWD		1						 				
-		***************************************						***************************************		DAIL	YAC	TIVITY	,			<u> </u>					
FROM				24 HOUR																	
0:00	3:00	3.00			otshot		lacer	nent x	-over	•											
3:00	4:30	1.50			tools &						71 	 									
4:30 5:00	5:00 6:00	1.00	TIF		test MV	AD.				······································		·	· · · · · · · · · · · · · · · · · · ·								
6:00	14:30		 	·	734 to 1	792									· · · · · · · · · · · · · · · · · · ·						·
14:30	15:00			servic		, 52						· · · · · · · · · · · · · · · · · · ·						·		······	
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Operato OATE 02/09 OAYS F/SP	or:	Wolverin	e G&O C	o of Utal	n, LLC		UAI	LY	IJK	: 11 I I	- 1 to		_ ,		34 6		A		4-1-4-4	
02/09 DAYS F/ SP					·							REPO				\$ - M	lanigi	t to mic		
AYS F/ SP	100	WELL			477.4	CONTRAC		D: 4	444		i	NTY, STATE	SPUD DATE	40.0	AP#	000	_	SUPERVI		
			IVERINE I			·	Unit TOTAL D	Rig #	111	PROGR		vier, UT	1/31/05 ING TIME	43-U ROP	41-3		TATION	4	teve H	
10)			Drilling	ı		:	2,024			163	23	3.50	6.9		A	\rapie	n	69	50
										MUD	DATA									
WT		VIS.	WL		CK P	н	SAND	SOL	DS %	PV	YP	GELS	DEPTH	DATE/TIME	CHL	ORIDE	S (CALCIUM	OIL	SALT PP
9.6		34	n/c	2	32 10	.3	tr	5	.5	5	17	11/19	1919	2/9/9am	67	7,000		2240		110,55
										BIT	DATA									
BIT SIZ	E N	IFG.	TYPE	IADC	SERIAL	NO.		(1/32nd")		IN	OUT	FOOTAGE	HOURS	ROP		MTR	RPM	WOB		CONDITK
4 17.5	00 5	TC ST	XR+XV	CODE	WMP3	127 2		TFA (18	1x22	1734	 	290	44.00	7.4		-	RT+MTR 40+120	10.00	ТВ	G
2 17.5			IGS5H		MJ38			20	20	497	976	479	41.00 35.00	7.1 13.7		Ϋ́	160	10-32 40	6 6	+ -
RF 17.5			C63LT		5486			c15	20	976	1003		6.00			Ÿ		30-45	 	
3 17.			TXR+C		MR41				1x22	1003	-		86.50	4.5 8.5		-	160 40+120		6 4	+
9 17.5	30 0	10 3	IXK+C	L	1 1411/41	03 2				1 1000	1/34	131	00.30	6.5		<u> </u>	40+120		ساسيا	
PUMP	MANUT	ACTURER	LINER	STROKE	GAL / STK	SPM	HYI GPM	AV D		V DC F	PUMP	MTR DIFF	1	P / IN ²	EC	_			PUMI 80 spr	
NO.		K	- NATEL	LENGTH	JOHL / SIK	S-M	J-M	1 ~ 0	^		RESS.	PRESS.	""	. 11%	=0	~	\vdash	oo spill	oo spr	100 8
1	Na	tional	6 1/4	8.5	3.23	125	404		1			"	<u> </u>				1		1	1
2	Na	tional	6 1/4	8.5	3.23	125	404					· · · · · · · · · · · · · · · · · · ·				-	2	l'''''	<u> </u>	1
Both					6.46	250	808	65		75 1	400	150				1		*		
			RILL S	RING			<u> </u>					GEOLOGI	C.					GENER	AT INI	0
ОТТОМНО	LE ASS	MBLY #5	LENGT	H T	O.D.	I.D.		FORMAT	ION	M		TVĆ		LITHOL	OGY				INFO	<u> </u>
7 1/2" E	Bit		1	.40	17.500			Arapi	en					Shale. Anhy	, Lm		Rig No	,	Unit 1	11
Direction	nal Ass	sembly	118	3.52	2.813												Cell N	c Steve	918-	629-9
6 5/8	8" SW	DP	183	3.58	2.813												Last E	OP Tes	t	1/3
16 - 5"	SWD	Р	485	5.14	3.125		BO	TTOMS	JP TIME	BG (SAS	GAS DATA CONN	GAS	TRIP	SAS	\dashv	Next E	OP Tes	st	2/2
3 - 5" H\	NDP		88	3.75					_								Last S	afety Me	eeting	2/9
lars			32	2.61				GAS UN	irs	FR	SW J	SHOWS TO		ROP (F	7/HR)	\exists	Last E	OP Drill		2/9
- 5" H\	NDP		118	3.76													Last C	perate i	Pipe Ra	ır na
																	Last C	perate l	Slind R	a na
Total B		8772 IA	1,028															perate /		
100,00		BHA WT. 46,000	145 O		SO WT.	ROT. TOP		RD. ELEV		GL TO		KB ELEV		INTERMEDI	ATE CS	G		CASING	 	T CASING
100,00	, I	40,000	115,0	ין טט	05,000	350	<u>' </u>	5,73	0	1		5,75	3				20" (@ 121	13-3/8	" @ 27
MD	INCL	AZIMUTH	TVD	N+/S-	E+/W-	SECTION	I bio	700			VEYS		·		Ţ				,	
	21.30				131.26			MW	-1-	MD	INCL.	AZIMUTH	 	VD	N+ /	/S-	E+/W-	SECTION	DLS	тос
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Opera	ator:	Wolv	erine	G&O C	o of l	Utah,	, LLC		D	AIL	Y C	R	ILL	.IN	G F	REPO	RT	2	4 hr	s - n	nidni	ght	to mid	night	
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ATE 02/1	1/05	WELL WO	verine l	ederal	17-4	CONTRAC		Rig #	111				VIET, STATE	SPUD DATE 1/31/05	43-0	АР# 41-3		5	SUPER		e Ha	sh
AYS F/ S	PUD		OPERATIO	ONS @ MIC	NIGHT		TOTAL	DEPTH		PROC	GRESS		DRILLI	NG TIME	ROP		FOR	MATION	AL	TH. D		
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5	2.25	50 D	PI M	P45B2MF		2016	038	·····	1.3	35		21:	27				#DIV/0! #DIV/0!		Y	<u> </u>				
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									HYDI	RAULK	cs											SLOW	PUMP	
PUM NO	Р	MANUFA	CTURER	LINER	STROK		SP	1 (SPM	AV DP	AVI	DC	PUM		MTR DIFF PRESS.	HH	P/IN ²	EC	Ö			60 spm	80 spm	100 spm
1		Nati	onal	6 1/4	8.5	3.23			0						· · · · · · · · · · · · · · · · · · ·						1			
2	_	Nati	onal	6 1/4	8.5	3.23	 	-	0		ļ	_		4						_:	2			
Bot	n			DRILL S	TOING	6.46	0		0		<u> </u>				GEOLOGIC							XFIJE B	AL INF	
	вна		по. 6	LENGT		O.D.		I.D.	F	ORMATIO	N		MD		TVD		LITHOLO	GY					AL INT	
12-1					1.25	12.250	+		-	Arapier	-			_			Shale. Anhy,	Lm		1	y No		Unit 11	
		5 deg amer (3	3)		5.20	2.813 7.938	+		1-	············			-		, , , , , , , , , , , , , , , , , , , 		ļ					Steve OP Test		29-9801 2/13
			nonels		9.66	3.500	+		вот	OMS UP	TIME	В	G GAS		GAS DATA	GAS	I TRIPG	AS		-		OP Tes		3/12
_	_	5-5/8 S			4.27										SHOWS					La	st Sa	afety Me	eting	2/13
			P, (3) 5		6.80		_			SAS UNITS	5	F	ROM	7	TO		ROP (FT	/HR)		_		OP Drill		2/9
Drilli (4) 5				+	2.61 8.76	2.250	1		╂─					- -									Pipe Ran Blind Ran	2/13 2/13
Tot	al Bi	łA:		1,026	6.85							,		1						La	st O	perate A	nnular	2/13
	NG W	+-	HA WT. 6.000	125.0		so wt. 100,000	·	TORQUE	GRE	5,736	ION	GL	то кі 17	3	KB ELEV/ 5,75		SURFACE 0 13-3/8" 68pp						PRODUC	TION CSG 6950
F				1					.11	5,.00		SU	RVE	YS	0,10		то-ого оорр	1 62 2	- 127		370	- 0000		0930
MD		INCL.	AZIMUT	H TVD	N+/S	E+/W-	SECT	ION I	DLS	TOOL	Mi	D	INC		AZIMUTH	1	VD D	N+	/ S-	E+	/W-	SECTION	DLS	TOOL
2,06	7 2	23.00	130.7	2028	-217.0	5 177.53	279.	22 3	.27	MWD	┢	\dashv		╅		<u> </u>				 			· · · · · ·	J
											D/	AILY	AC	TIVIT	γ									
0:0	_	5:00	5.00	_	T 24 HOUI		5m er	oole:	mud	cross	(2)	12	E/0"	Em	indo POC	Do 12 E/08	5m annula	- 4	2 5	O!! -		b		
5:0	_	6:00	1.00			pipe ram					<u>, (2)</u>	10-	3/0	Jili 3	single bor	-5, !3-5/6	on annua	11, 1.	3-0 <i>1</i>	0 1	otat	ing nea	ia, chk	mannoi
6:0		16:00	10.00														nular, chok				tes	t csg to	1500	osi
16:0 18:0	-	18:00 0:00	2.00 6.00			or, set ir BHA #6			rep to	PU to	ools.	Dι	ımp	& cle	an mud ta	inks of cm	t contamin	atec	ım t	ud				
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Jaii	, , , ,		24.00									C/\2	· ·	ATA										
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Opera	itor:	Wolverin	e G&O C	o of Uta	h, LLC	`								PO	RT	2	4 hr	s - n	nidnigh	t to mic	Inight	
DATE	4.465	WELL				CONTRA				4			OUNTY, S		SPUD DATE		AP#			SUPERVE		
DAYS F/	14/05 SPUD		Iverine I			<u> </u>		TIL RIG T	F11		ROGRE		evier.		1/31/05 NG TIME	43-04 ROP			MATION		H. DEP1	
ļ	15	<u> </u>	······································	Drilling	g		<u> </u>	2,406	3		2	279		18	.00	15.5		/	Arapier	١	69	50
W		VIS.	WL		ск	РН	SAND	1 80	LIDS		IUD I	DATA VP		GELS	DEPTH	DATE/TIME	CHI	ORID	EQ I C	ALCIUM	OIL	SALT PPM
8.0		33	n/c			4.0	tr		1.0		4	15		5/9	2153	2/14/8am		9,00		1400		
												DATA										
BIT :	SIZE N	IFG.	TYPE	CODE	SERIAL	NO.	JE	TS (1/32nd or TFA	')		IN	ου	T F	OOTAGE	HOURS	ROP		MTR	RPM RT+MTR	WOB	T	CONDITION
			XR+XV		WMP:		x28	1x18	1x		1734	212	27	393	60.50	6.5		-	40+120	15-38	4	<u> </u>
5 12	.250 [OPI MP	45B2MF		2016	038		1.335			2127	┼	\dashv	279	18.00	15.5 #DIV/0		Y			\vdash	-
					1							1	+			#DIV/0					\Box	+-
							Н	YDRAL	LIC	S										SLOW	PUM	ρ
PUMP	MANUF	ACTURER	LINER	STROKE		K SPM	GP	M AV	DP	AV D	ı	UMP		R DIFF	ннг	7 / IN ²	EC	Œ	PMP#	DEPTH	SPM	PSI
NO. 1	Na	tional	6 1/4	LENGTH 8.5	3.23	+	-				PR	RESS.	PR	ESS.		······································		\dashv	2	2296 2296	67 77	100
2	+	tional	6 1/4	8.5	3.23		0				\top					······································				2230	<u>''</u>	1 140
Both					6.46	0	0				\perp											
	ВНА	no, 6	RILL S		O.D.	1.0		FORM	TION		MD	, ,	GE	OLOGIC TVD		LITHOLO	oov.			GENER	AL IN	FO
12-1/4		110, 0		1.25	12.250	+		Arap		$\overline{}$	ML	'		190		Shale. Anhy,			Rig No		Unit 1	11
DHM	1.25 deg		28	3.30	2.813	3													Cell No	Steve	918	-629-980
	reamer	` .′		5.20	7.938								G/	AS DATA		1				OP Tes		2/13
	ts 6-5/8	monels,		9.66 1.27	3.500	<u>'</u>		BOTTOMS	UP 1	TIME	BG G	AS		CONN	AS	TRIPG	AS	\neg		OP Tes		3/12 2/14
		OP, (3) 5'	 	3.80				GAS	INITS	31	FRO			SHOWS TO		ROP (FT	/HR)			OP Drill	curg	2/9
Drilling			 	2.61	2.250														Last O	perate f	Pipe R	ar 2/13
<u> </u>	HWDP BHA:		1.026	3.76	J	-				\dashv										perate I		
STRING		SHA WT.	PU W		SO WT.	ROT. TO	RQUE	GRD. ELE	VAT	ION	GL TO	КВ		KB ELEVA	TION	SURFACE	CASING	G		perate /		r 2/13 UCTION CSG
110,	000	45,000	120,0	00 1	105,000	<u> </u>		5,7	36		17		,,.	5,75	3	13-3/8" 68pp	f @ 2	2127	9-5/8"	~ 6000	7'	~ 6950
MD	INCL.	AZIMUTH	TVD	N+/S-	E+/W-	SECTIO	V DL	в то	OL	MD	_	VEYS	AZI	MUTH	1 1	VD	N+	/ S-	E+/W-	SECTION	DLS	TOOL
2,067		130.70			5 177.5					2,27		4.00	13	2.70		216	-269	9.32	239.53	357.22	1.8	MWD
2,176	23.40	128.60	2128	-244.4	4 210.5	320.4	1 0.8	4 MV	VD				14	1.60	2:	302	-297	7.86	265.97	395.67	3.8	MWD
FROM	T	T	LAS	T 24 HOUR	s:					DA	LYA	CTIV	TY									
0:00	0:30	0.50	TI																			
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1:30 3:00	1	1.50 2.50			H, LD to float @					int @	ZU6	1										
5:30	+	+			formation																	
16:00	+			servi																		
16:30 0:00		7.50	Dri	illing fr	om 226	to 24)6															
0:00		 	 					· · · · · ·														
0:00					·····																***********	
0:00	+	 	ļ												-11	IN-II		W	HAH			
0:00		 			~~~	 										7 Y 5 1 hard	Error I		v rs 1 the	-		······································
0:00	+		Up	date @) 3:00a	m - Sta	rt TO	H @ 2	425	for i	nud	moto	r???									
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Daily	Total	24 00	Γ	· · · · · · ·										***								

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Ope	erato	or: V	Volverin	e G&O C	o of Uta	h, LLC		D	AIL	YD	RII	_L	INC	F	REPOI	RT	2	4 hr	s - n	nidnigh	t to mic	Inigh	:	
DATE			WELL				CON	TRACTOR		<u>_</u>			7	COUN	TY, STATE	SPUD DATE		AP#			SUPERVIS			
	2/15 F/ SP			Iverine I			<u>L</u>		Jnit Ric			BOOK	RESS	Sev	ier, UT	1/31/05 NG TIME	43-0- ROP	41-3		MATION		rren I		lor
DATE	16		ricoti	T OF LICHTA	Trip	JAKSI 11		"	2,4			ROG	19			50	7.6			MATION Arapier	- 1		 950	
									***************************************			AUC	DAT	A									-	
	WT		VIS.	WL		СК	РН	SAN	D S	SOLIDS		PV		ſΡ	GELS	DEPTH	DATE/TIME	CHL	ORID	ES C	ALCIUM	OIL	SAL	LT PPM
L	8.6		33	n/c	1	/32 1	4.0	tr		1.0			i				2/15/8am							
ВІТІ	OUT	- 1	. T	77/05		SERIAL						BIT	DATA			Lucyina								
NO.	StZ	≝ MP	G.	TYPE	IADC CODE	SERIAI	. NO.		JETS (1/32) or TFA	nd")			ľ	UT	FOOTAGE	HOURS	ROP		MTR	RPM RT+MTR	WOB		B	G
4	17.5	00 ST	C ST	XR+XV		WMP	3127	2x28	1x18	1x	22	173	4 21	27	393	60.50	6.5		Υ	40+120	15-38	4	4	ı
5	12.2	50 D	PI MP	45B2MF		2016	038		1.335			212	7 24	25	298	20.50	14.5		Υ	0+120	10-35	8	8	1
6	12.2	50 S1	CE	3XS12S		10676	670		1	4	_	242	5				#DIV/0	!					4	
						<u> </u>			1	<u> L</u>						<u> </u>	#DIV/0	!	Ll		L	Ц		
<u> </u>	т					_	T		HYDRA			_							\Box		SLOW	PUN	P	
PUI	- 1	MANUFA	CTURER	LINER	STROKE	i	K SF	M (SPM A	V DP	AV D		PUMP		MTR DIFF	нн	P / IN ²	EC	;D	PMP#	DEPTH	SPM	+	PSI
1	-+	Nati	onal	6	8.5	+	+	-	0		 	+	PRESS.	-	PRESS.	<u> </u>		 	-	2	2296 2296	67 77	\dashv	100 140
2	-+	Nati		6	8.5	1	T	\top	0			+		-				-	\dashv		2290	- ''	+	140
Во	_					0	(,	0			\dagger						 	\neg		· · · · · ·		\dagger	
\vdash				RILL S	RING				T					- (EOLOGIC	;			_		GENER	AL IN	FO	
	BHA		no. 7	LENGT	н	Q.D.		I.D.	FOR	MATIO	N	٨	MD		TVD		LITHOL	OGY				INFO		
	/4" E			 	.00	12.250	+		An	apien	-			<u> </u>			Shale. Anhy,	Lm		Rig No	•	Unit 1	11	
		25 deg	<u></u>		5.20	2.813	+	····	 		-			ļ		,	ļ		\dashv	Cell No			64	5-6671
		amer (3 HO, 2 n		· · · · · · · ·	0.66	7.938	+							<u></u>	GAS DATA		<u> </u>		_		OP Test		+	2/13
	-	6-5/8 S	<u>_</u>	184	+_	3.300	1		ВОТТО	MS UP	TIME	BG	GAS		CONN	BAS	TRIPG	AS	\neg		OP Tes afety Me		+	3/12 2/15
		' SWD					†		GAS	UNITS		FR	ROM		SHOWS		ROP (FT	AUD)			OP Drill	eung	+	2/13
	ng ja				2.61	2.250	,						· · · · · ·				KOF (F)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			perate F	Pipe R	ar	2/13
(4) 5	" HV	VDP		118	.76													, , , , , , , , , , , , , , , , , , , 			perate E	··	_	2/15
	tal B		HA WT.	1,027		SO WT.	L.,														perate A			2/13
	0.00		5,000	120.0		05,000	ROI.	TORQUE		,736	ION		го кв 17	-	KB ELEVA 5,75		SURFACE (13-3/8" 68pp	•			~ 6000			10N CSG 1950
=									N	,,,,,,		_	 {VEY	<u></u>	0,70		Tro-circ copp	n (Lg 2	. 12/	3-3/0	- 0000	<u>Ľ</u>		930
Mi		INCL.	AZIMUTH	TVD	N+/S-	E+/W-	SEC	TION I	OLS T	OOL	MD	Ĭ	INCL.	_	AZIMUTH	Ī	VĐ	N+ /	/ S-	E+/W-	SECTION	DLS		TOOL
2,0	67	23.00	130.70	2028	-217.0	5 177.5	279	.22 3	.27 M	WD	2,27	1 :	24.00	<u> </u>	132.70	2	216	-269	.32	239.53	357.22	1.8	5	MWD
2,1	76	23.40	128.60	2128	-244.4	4 210.5	320	.41 0	.84 M	WD	2,36	6	24.50	<u> </u>	141.60	2:	302	-297	.86	265.97	395.67	3.8	<u>1</u>	MWD
FRC	104 T			LAST	24 HOUR	6.					DA	LY	ACTIV	/ITY										
0:0		1:00	1.00			om 2400	3 to 2	421					·											
1:0		1:30	0.50			air - ch			eat in r	oumr) #1		·····		·		***							
1:3	0	3:00	1.50	Dri	lling fro	om 242	l to 2	425																
3:0		7:00	4.00			mud m	~~~			е														
7:0	_	10:00	3.00			nud mo																		
10:		22:00	12.00											mu	d, dump a	all mud tar	nks, clean	out t	ank	s, lines	s, suctio	ns, r	efill	, circu
22:	_	0:00	2.00	1711	to sh	oe, disp	lace	conta	minate	d mu	id in I	nole	<u> </u>					·			·····			 1
0:0	_			 							·													
0:0	-			 		····	·	·····												*****				
0:0				 	·····				· · · · · · · · · · · · · · · · · · ·								time to time time	B 3 ""		A I	······································			
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Dei	L To		24.00	 																	· · · · · ·			

	1		Engii	neering	& Suj	pervisio	n							ng, Inc.				(9	18) 599	-9400		
	rator	-		e G&O C	of Uta	h, LLC			AIL'	Y D	RII	<u>.LII</u>		REPO		2			nidnigh			
	2/16/ F/ SPU	05		Iverine F			CONTRA	U	nit Rig			ROGRES	Se	evier, UT	1/31/05	43-0	^{AP#} 41-3	3003			rren N	
UATS	17	Ů.	PRESEN		ns & wil Drilling			IOIA	2.8		٦		ss 31		NG TIME .50	20.0		i i	MATION Arapier	1	H. DEPTH	
												AUD E	ATA									
	WT 3.6	-	vis. 35	n/c			.0	SAND		SOLIDS 1.5	%	ру 6	YP 20	GELS	DEPTH	DATE/TIME	_	LORID		ALCIUM	OIL	SALT PPM
	5.0			100	1.4	752 5	.0 1	<u> </u>		1.5		BIT D		7/3	2543	2/16/8:40		8,00	0 1	800	<u> </u>	
BIT NO.	SIZE	MF	G.	TYPE	IADC	SERIAL	NO.	JE	TS (1/32)	nd")	T	iN .	OUT	FOOTAGE	HOURS	ROP		MTR	RPM	WOB		ONDITION
	12.25	0 51	TC EE	XS12S	CODE	10676	570 2	243	or TFA	2	4	2425		431	21.50	20.0		Y	RT+MTR 40+120	15-38	ТВ	G
																#DIV/0	!	Ė	70 120	75.50		1
\dashv						 	_		······································		_					#DIV/0	!					
		<u> </u>				<u> </u>	L						<u> </u>		<u> </u>	#DIV/0	!			<u> </u>		<u> </u>
PUM	P A	ANUFA	CTURER	LINER	STROKE	GAL/STK	SPM	GP	IYDRA	V DP	AV DO	.] .	IMP	MTR DIFF	T	2 (m²					V PUMF	
NO					LENGTH	1	J		" ^	W DF	A * DC	1	ESS.	PRESS.	i nu	⊃ / IN²	EC	ן טג	PMP#	2296	SPM 67	100
1	\perp	Nati	onal	6	8.5	2.8	125	35	i0										2	2296	77	140
2 Bot		Nati	onal	6	8.5	2.8	125	35				+										
DUI	11]			RILLST	DING	5.6	250	70	0 1	140	200	15	00	150	<u> </u>		<u> </u>					
	вна		no. 7	LENGTI		O.D.	I.D		FOR	MATION		MD		GEOLOGIC TVD		LITHOL	OGY	-		GENER	INFO	0
	/4" Bi			·	.00	12.250			Ara	apien						Shale. Anhy,	Lm		Rig No)	Unit 11	1
	1 1.25 ream		·	28	91	2.813 7.938					+		-		·				Cell No			645-667
			nonels,		66	3.500			BOTTON	US HD T	ME I	BG GA		GAS DATA		70.5				OP Tes		2/13 3/12
			WDP	184	27				507708	NO OF 1		BG GA		CONN	5A5	TRIPG	AS	\dashv		afety Me		2/16
			P, (3) 5"	576	80				GAS	UNITS		FROM		SHOWS TO		ROP (FT	7HR)	\equiv		OP Drill		2/9
	ng jar " HW		· . w-	32 118		2.250					\bot		_						Last O	perate F	Pipe Ra	2/13
`	al BH			1,027				-			\dashv							\dashv		perate E perate A		
	NG WT.		HA WT.	PU WT		SO WT.	ROT. TO	RQUE		LEVATION	NC	GL TO	КВ	KB ELEVA	TION	SURFACE			INTERMED	NATE CSG		CTION CSG
130	0,000	<u> </u>	5,000	120,00	0 [1	05,000			5	,736		17		5,75	3	13-3/8" 68pp	of @ 2	2127	9-5/8"	~ 6000	7" -	6950
MD		NCL.	AZIMUTH	TVD	N+/S-	E+/W-	SECTION	V DL	S T	OOL	MD	SURV		AZIMUTH	T T	VD 1	N+ /	18-	E+/W-	SECTION	DLS	TOOL
2,55			136.90			314.21				WD	2,74		.70	120.90	26	346			376.00			MWD
2,64	9 2	4.30	124.60	2561	-382.00	343.00	509.00	5.2	29 M	WD				112.80	27	731	-421	.00	412.00	580.00	4.00	MWD
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Both	1		SOUL	<u> </u>	5.6	2	50	700	140	200	1 ן נ	1500	150	<u> </u>							Щ.
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					,				0,700			VEYS	0,70	<u> </u>	10-3/8 08pp	1 (4) 2	124	9-3/6	- 6000		~ 6950
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(4) 5" (-IWDP		118	3.76															perate I		
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www.exactengineering.com

415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

Steven R. Hash, P.E. Registered Professional Engineer stevehash@exactengineering.com

CONFIDENTIAL PLEASE!

March 7, 2005

Mr. Dustin Doucet Utah Division of Oil, Gas & Mining 1594 West North Temple, Suite 1210 Salt Lake City, UT 84114-5801

Re:

Wolverine Federal 17-4 well

Sec 17 T23S R01W Sevier Co., UT API# 43-041-30035

Dear Mr. Doucet,

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed daily drilling reports for the subject well from February 19, 2005 through March 6, 2005. Our present status is drilling at 6195'. We expect to TD and log within the next 24 hours. We respectfully request that the enclosed information remain confidential.

Very Truly Yours, Steven 72. Harl

Steven R. Hash

Consulting Engineer for Wolverine Gas and Oil Company of Utah, LLC

copy without enclosures via email to:

Wolverine Gas & Oil Co of Utah, LLC: Richard Moritz, Sue Benson

EXACT Engineering, Inc.

well file

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DIV. OF OIL, GAS & MINING

CONFIDENTIAL

Petroleum Engineering Consulting, Personnel & Jobsite Supervision complete well design, construction & management, drilling, completion, production, pipelines, appraisals, due diligence, acquisitions, procedures, temporary personnel and field supervision

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,						ervisio	n							ng, Inc				(5	918) 59	9-9400		
Oper	ator:		/olveri r WELL	e G&O C	o of Utah	ı, LLC	CONTRA		AIL		RIL	LII		REPO					midnig	ht to mi		t
02	/19/0	5	Wo	lverine l	Federal	17-4	CONTRA		nit Rig	#1	11			UNTY, STATE Evier, UT	1/31/05	43-0	API#		35	SUPERVI		Vaylor
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BIT NO.	SIZE	MF	G.	TYPE	CODE	SERIAL	NO.	JE	TS (1/32n or TFA	id")		IN	OUT	FOOTAGE	HOURS	ROP		MTR	1	WOB		CONDITION
RR€ 1:	2.250	ST	C E	3XS12S		10676	670 2	24	24	2	24 24	140		0	0.00	#DIV/0)!	Y	RT+MTR 40+120	15-40		3 G 2 I
																#DIV/0		Ė	10 1 120	10 40		
						ļ <u>.</u>		_								#DIV/0)!					
		<u></u>				<u> </u>	L_			<u> </u>						#DIV/0)!					
DUMD	Τ		AT 1000			T	1	_	YDRA	_		r								SLOW	PUN	Р
PUMP NO.	MAI	NUFA	CTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GP	M AV	/ DP	AV DC	PU		MTR DIFF	HHI	7 / IN ²	EC	D	PMP#	DEPTH	SPM	PSI
1		Natio	onal	6	8.5	2.96	100	29	6			PRE	SS.	PRESS.			-		1	2296	67	100
2		Natio	onal	6	8.5	2.96	100	29					_		l		-		2	2296	77	140
Both						5.92	200	59	2 1	40	200	15	00	150				\exists	<u> </u>			+
			_	RILL S									***	GEOLOGIC	C	*	·			GENER	AL IN	FO
12-1/4	BHA		no. 7	LENGT	н .00	O.D. 12.250	I.D.	-	FORM			MD		TVD		LITHOL					INFO	
2.5 de		tor			2.30	2.813			Ara	pien	<u> </u>		_			Shale. Anhy	, Lm		Rig No		Unit 1	
						7.938		┰╢			_		+					_		Darren OP Tes		-645-6671
float,L	BHO.	, 2 m	onels,	79	.66	3.500			воттом	SUP	TIME E	G GA	s i	GAS DATA CONN C	SAS	TRIP	AS.			OP Tes		2/13 3/12
xo, 6 j				184	.27															afety Me		2/19
			P, (3) 5					_#	GAS	UNITS	3	FROM	T.	SHOWS TO		ROP (F1	(HR)		Last B	OP Drill		2/18
Drilling (4) 5"				118	.61	2.250		╌╟		_			_						Last O	perate P	ipe R	ar 2/18
	BHA			1,015	5555555						_							_		perate B		
STRING			A WT.	PU W1	: s	O WT.	ROT. TOP	QUE	GRD, EL	EVAT	ION G	L TO K	(B	KB ELEVA	TION	SURFACE	CASING	G	INTERME	perate A	PROD	r 2/13 JCTION CSG
110,	000	45	,000	120,0	00 10	5,000		_	5,7	736		17		5,753	3	13-3/8" 68pp	of @ 2	2127	9-5/8"	~ 6000	7"	~ 6950
MD	INC	CL.	AZIMUTH	TVD	N+/S-	E+/W-	SECTION	DLS	ТС	or I	SI MD	JRV	EYS	AZIMUTH	7							
										<u> </u>	WID	1140		AZIMUTA		VD	N+ /	'S-	E+ / W-	SECTION	DLS	TOOL
FDOM	·								<u>-</u> _		DAIL	ΥAC	TIVIT	Υ							-	
0:00	21:	30	21.50	WC	24 HOURS	:																
21:30	+	-	2.50			2280 to	o 2375	tagg	ed ce	men	nt @ 23	75	firm (n 2390								
0:00												. 		_{>} =300								
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0:00	-	\dashv		Plu	g back	TD 244	U															
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0:00		╧		9:aı	m time o	drill 2 m	in. an i	nch 2	2440 t	o 24	152											
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Ope	rator:		rine G&				OII \								ng, Inc REPO				(918) 5	99-9400)	
DATE		WELL		5 00 0	or otan,	, LLC	CON	TRACT	OR OR	IL I		IL	LIN		REPO INTY, STATE	R I		_	_	midnig	ht to m	_	ıt
	2/20/05 F/ SPUD		Volverii SENT OPE	e Fe	ederal 1	17-4	<u> </u>		Unit	t Rig#	111			Se	vier, UT	1/31/05	43-0	API :-141		35	SUPERV		Naylor
	21	I FRE	SENT OPE		NS @ MIDI Drilling	NIGHT		ין		2,618		PRO	GRESS 178		1	LING TIME	ROP			RMATION		TH. DEP	
										2,010		MU	D D/		1 10	0.00	17.8		_	Arapie	n	69	950
	vт .4	VIS.		WL	Ci		PH	SA	ND	SOLI	os %	P		ΥP	GELS	DEPTH	DATE/TIME	CH	LORI	DES	CALCIUM	OIL I	SALT PPM
F	.4	32		n/c	2/3	32 1	4.0		tr	2.	3	3		17	8/11	2447	2/20/07:30	9	8,00		1700		161,700
BIT NO.	SIZE	MFG.	TYPE		IADC	SERIAL	NO.		JETS	(1/32nd")		BI.	T DA	TA OUT	FOOTAGE	HOURS	ROP		MTF				
-	2.250	STC	EBXS1		CODE	10676	670	24		TFA 24	24	1	40		ļ <u></u>	ļ			_	RT+MTR		T I	CONDITION G
						10010			+		24	244	40		178	10.00	17.8		Y	40+12	15-40	\sqcup	
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브				Щ.													#DIV/0		\vdash			╁┼	+
PUMP	MAN	UFACTURE		5 G	I					DRAUL	cs										SLOV	/ PUM	P
NO.	IVIAN		RLINE	1 -	TROKE (GAL / STI	SPI	М	GPM	AV DP	AV	DC	PUMP	- 1	MTR DIFF	HHF	2 / IN ²	EC	CD	PMP#	DEPTH	SPM	PSI
1	l N	lational	6		8.5	2.96	12	0	355	† —	\dagger	\dashv	PRESS	2.	PRESS.			_		1	2296	67	100
2		lational	6	-	8.5	2.96	12	-	355					工				 	_	2	2296	_ 77	140
Both	<u> </u>		Den			5.92	24	0	710	155	2	15	1650		150								
	ВНА	no. 7	DRILL	STR		D.D.		I.D,		FORMATIO	NO.		MD		GEOLOGIC TVD						GENER	AL IN	0
12-1/4				1.00	0 1	12.250			_	Arapie				+	170		LITHOLO Shale. Anhy,			Rig No		INFO Unit 1	1.4
2.5 de	g moto	or		22.30	0	2.813											ondio. , unity,			_	Darren		645-6671
float.U	ВНО.	2 monel	-	79.66	-	7.938			Ł						GAS DATA					Last B	OP Tes		2/13
		8 SWDF		84.27		3.300			BOT	TOMS UP	TIME	BG	GAS	+	CONN G	SAS	TRIP G	AS	4		OP Tes		3/12
		/DP, (3)	5' 5	76.80	o .				E	GAS UNIT	S	FF	ROM	<u> </u>	SHOWS		ROP (FT/	n Day	\exists		afety Me OP Drill	eting	2/20
Drilling	j jars HWDP			32.61	+	2.250											KOP (FT)	/HK)	\dashv		perate P	ipe Ra	2/20 r 2/18
<u> </u>	BHA:	······································	-	18.76 15.40					╟			_		┼							perate B		
STRING		BHA WT.	PU	WT.	so	WT.	ROT. T	ORQU	GR	D. ELEVAT	ION	GL T	ГО КВ	$oxed{oxed}$	KB ELEVA	TION	SURFACE C	ASING		Last O	perate A	nnula	2/13 CTION CSG
110,0	000	45,000	120	,000	105	,000			<u> </u>	5,736			7	_	5,753		13-3/8" 68ppi	f @ 2		9-5/8"			· 6950
MD	INCL	AZIMUT	H TVD	N-	+/S- I	E+ / W-	SECTION	I NC	DLS	TOOL	М		INCL.		AZIMUTH T								
2,394	23.8	0 143.2	0 2328	3 -3	306	273	406		.40	MWD		88 1		_	170.10			N+ /	_	E+/W-	SECTION 474	DLS 6.60	MWD
2,493] 20.4	0 149.5	0 2419	-3	337	295	445	7	.30	MWD	2,6	19 1	17.50		174.10	253	39	-37	_	307	483	4.00	MWD
FROM	L	<u> </u>	LA	ST 24 H	HOURS:	-					D/	VILY.	ACTI	VITY					_				
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1:30 14:00	0:00				drill 24																		
0:00	0.00	10.00	 	шă	surve	ys	1	υ0%	side	tracked	<u>@</u>	2517	7			· · · · · · · · · · · · · · · · · · ·							
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AF	E DH	C \$	2	276.	579		DΔ	II Y N	MID.	•		OST	DAT	A					_				

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Ope	rato	r: V	Volver	ne G&O (Co of Utal	n, LLC		DA	ILY I	DRII	LLI	ING	REPO	RT	2	4 hr			nt to mi		
DATE			WELL				CONTRA						OUNTY, STATE	SPUD DATE	1	API#		manigi	SUPERVI		
	2/21/ F/ SPU				Federal				it Rig #1				evier, UT	1/31/05	43-04	11-3				rren N	
ביוט	22	JU	FRESI	INI OPERA	RIH	DNIGHT		IOIAL	2,914		ROGR	ess 296		ING TIME 1.50	ROP			MATION		H. DEPT	
								-	2,017			DATA		.50	16.9		_ '	Arapier	י	69	50
	ντ	T	VIS.	W	. (CK F	Н	SAND	SOLIE		PV	DA I A		DEPTH	DATE/TIME	CHI	.ORIE	es C	CALCIUM	OIL :	SALT PPM
9	9.5		32	n/	2	/32 1	1.0	tr	3.	0	4	10	4/7	2447	2/21/09:00		4.00		1700		155,000
-								-			ВІТ	DATA				-	_			· · · · · · ·	
BIT NO.	SIZE	M	=G.	TYPE	IADC	SERIAL	NO.		S (1/32nd") or TFA		IN	OUT	FOOTAGE	HOURS	ROP		MTR		WOB		CONDITION
RRE	12.25	50 SI	EC E	BXS128	+	10676	670 2	4		24	2440	291	4 474	27.50	17.2			40+120	15 40	T B	G
	12.25	_	EC E	BXS128	;						2914		7 7/7	27.50	#DIV/0!			40+120	15-40	6 4	
			1												#DIV/0!	_				-	
												1-			#DIV/0!	_				 	
			-					Н	DRAUL	ICS					,,,,,,,,				SI OW	/ PUMF	-
PUM	P	MANUFA	CTURE	LINER	STROKE	GAL / STK	SPM	GPM		AV DO	C F	PUMP	MTR DIFF	НН	P / IN²	EC	: _D	PMP#	DEPTH	SPM	PSI
NO	4		••••		LENGTH						- 1	RESS.	PRESS.				-	1	2296	67	100
1	4	Nati	onal	6	8.5	2.96	120	355			$oldsymbol{\mathbb{T}}$							2	2296	77	140
2	4	Nati	onal	6	8.5	2.96	120	355													T
Bot	h			<u> </u>	<u> </u>	5.92	240	710	155	215	5 1	650	150								
				DRILL S									GEOLOGI	C					GENER	AL INF	0
19_1	вна /4" В	i+	no. 7	LENG		0.D.	I.D.	-	FORMATI		M	D T	TVE)	LITHOLO	ĠΥ			RIG	INFO	
		5 deg			1.00 8.91	12.250 2.813		-	Arapie	n					Shale. Anhy,	Lm	_	Rig No		Unit 11	
3 pt.					5.20	7.938						-	 					 	Darren		645-6671
			nonel		9.66	3.500			A				GAS DATA		<u> </u>				OP Tes	-	2/13
			SWDF		4.27	0.000		- -	OTTOMS U	TIME	BG G	GAS	CONN	GAS	TRIP G	AS	-		OP Tes		3/12
xo,(1	6)5"	SWD	P, (3)		6.80				GAS UNI	- L	FRC		SHOWS				\exists		afety Mo		2/21
Drilli	ng ja	rs		3	2.61	2.250			_ OAG 0111	-	FRC	JIVI	то		ROP (FT/	HR)	\dashv		perate F		2/20
(4) 5	" HW	/DP		11	8.76														perate E		
	al Bl				7.21														perate /		
	NG WT	+-	на wt. 5.000	120.0		SO WT.	ROT. TOP	QUE	SRD. ELEVA	TION	GL TO		KB ELEV		SURFACE C			INTERMED	DIATE CSG		CTION CSG
	,,000		5,000	120,0	000 [10	05,000		L_	5,736		17		5,75	3	13-3/8" 68ppt	@ 2	127	9-5/8"	~ 6000	7" ~	- 6950
MD		INCL.	AZIMUT	H TVD	N+/S-	E+ / W-	SECTION	DLS	TOOL	MD MD		VEYS NCL.	AZIMUTH	T	VD I	Ni. (F. (14)	SECTION		
2,68	2 1	7.10	182.6	0 2599	-394	308	499	5.00		2,80			186.40		719	-43	_	304	530	3.80	MWD
2,87	2 1	9.50	177.3	0 2778	-456	304	548	6.90											- 000	0.00	101000
										DA	LY 7	ACTIVI	TY								
FRO					T 24 HOURS																
0:0	_	1:00			ill & surv		18 to 28	320													
11:0	_	1:30 8:00	0.50 6.50		g servic		20.4- 0	24.4													
18:0		9:00	1.00		ill & sur ash & re				3 TO 20	1.1											
19:0		2:30	3.50		ımp slug					14											
22:3	$\overline{}$	0:00	1.50		J stabiliz				,.01										····		
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0:0	_												- · · · · · ·					············			
0:0)																				· · · · · · · · · · · · · · · · · · ·
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0:0	1			68	am drillir	ng ahea	d @ 29	30											-		
0:0				 											COUL	מו					
0:0				<u> </u>											LUIVE	Ш		VIII			
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	ΛEE	DHC	•	2	276 570		DAU	V MI		<u>c</u>	OST	DATA	\								

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Оре	erator:	: v	Volverir	ne G&O C	o of Utah	n, LLC								REPOR		:	 24 hi		midnigi				
DATE		Ī	WELL	~			CONTRAC							JNTY, STATE	SPUD DATE	T	API#		midnigi	SUPERV	`		
	2/22/0		Wo	Olverine F	Federal	17-4	<u> </u>		nit Rig #	<u> 1111</u>				vier, UT	1/31/05	43-0	<u>41-3</u>			Da	arrer	n Na	
UA. C	23	, l	PRESC	11 OPERALI	RIH	MIGHT		TOTAL	3,259	ı	PRO	OGRES 34		1	ING TIME 3.50	ROP 18.6		1	RMATION		TH. DI		
								<u></u>					DATA		.50	10.0		<u>—</u>	Arapier		_	6950	<u> </u>
_	WT	工	VIS.	WL			РН	SAND	SOL	.IDS %		PV	YP	GELS	DEPTH	DATE/TIME	СН	LORIE	DES C	CALCIUM	OIL	S/	ALT PPM
	9.5	<u> </u>	30	n/c	2/	/32 10	0.5	0.50	2	2.6		3	12	5/9	2972	2/22/9:30	10	05,00	00	1880		17	75,250
ВІТ	SIZE	MF	-G	TYPE	I IADC	SERIAL	NO. I	IET	ΓS (1/32nd")	_		IT D/		1 -00-105			_	_			_	_	
NO.		4			CODE	SERIAL.	NO.		or TFA		'	iN	OUT	FOOTAGE	HOURS	ROP		MTR	RPM RT+MTR	WOB	DL T	DLL CO	ONDITION G
7	12.250	0 SE	<u>:C</u> E	BXS12S	<u> </u>	106866	<u>371</u> 2	22	22	22	29	914		345	18.50	18.6		Υ	40+120	 	-	П	
		\vdash	+					4	\longrightarrow					<u> </u>		#DIV/0	<u> </u>						
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=		느	_ _		<u> </u>	<u></u>					<u> </u>				<u></u>	#DIV/0	!			<u> </u>		Ш	
P1.18.				Τ	T			Т"-	YDRAUI	_							_			SLOW	VP U	MP	
PUN	- 1	ANUFA	CTURER	LINER		GAL / STK	SPM	GPM	M AV DE	P '	AV DC	PUN	- 1	MTR DIFF	HHF	P / IN²	EC	סג	PMP#	DEPTH	+	PΜ	PSI
1	+-	Natio	onal	6	LENGTH 8.5	2.96	120	355		+		PRE	SS.	PRESS.	 				1	2296	+	37	100
2	_	Natio		6	8.5	2.96	120	355		+		 	+		 				2	2296	 7	77	140
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				DRILL S	TRING			一		<u>-</u>	210			GEOLOGIC	<u> </u>		<u>_</u>				<u> </u>		
	BHA		no. 7	LENGT		O.D.	I.D.	士	FÖRMAT	TIÓN		MD		TVD	-	LITHOLO	OGY		<u> </u>	GENER	RAL GINFO		5
12-1	/4" Bit	<u>t</u>		1	1.00	12.250			Arapi	en						Shale. Anhy,		\neg	Rig No			t 111	1
	11.25				3.91	2.813		<u> </u>			\Box								11 ~ 1	(Darren			45-6671
	reame			+	5.20	7.938		_						~**					1	OP Tes			2/13
			nonels,	` 	9.66	3.500	 	_	BOTTOMS	AIT PL	VE E	BG GAS	s	GAS DATA CONN G	AS	TRIP G	AS		Next E	3OP Tes	st		3/12
	6 jts 6-			184				─			Щ_			SHOWS					l	Safety M		ng	2/22
	ng jars		P, (3) 5	 	3.80 2.61	2.250		$-\mathbb{F}$	GAS UN	ITS	T	FROM	干	TO		ROP (FT	7HR)	二	l	OP Drill			2/22
	ing jars 5" HWE				3.76	2.250		-			+		+							perate F	<u> </u>		2/22
	al BHA			1,027	107 107 107			\blacksquare			+-									perate E			2/22
STRI	NG WT.	BH	HA WT.	PU WT		SO WT,	ROT. TOR	KQUE	GRD. ELEV	/ATIO	N G	L TO K	(B	KB ELEVA	TION	SURFACE (CASIN	G_		Diate CSG			2/13 TION CSG
110	0,000	45	5,000	120,00	00 10	05,000	<u> </u>		5,736	8		17		5,753	3	13-3/8" 68pp	of @ 2	2127		~ 6000	1		6950
240										_		URVE					_	_			_	_	
2.99			158 10	2898	N+/S- -491	E+/W- 312	SECTION 582	1.64		—	MĐ	INC		AZIMUTH	יו	VD	N+ /	/ S-	E+/W-	SECTION	DI	LS	TOOL
				3140	-556	342	652	0.97				\vdash	+								├	\dashv	
		<u> </u>			<u> </u>							<u> </u>	CTIVIT					_			<u>_</u>	ᆜ	
FRO	М	コ		LAST	7 24 HOURS:	i:					DAIL	I AU	HIVII	Y									
0:0		:30	1.50		I to 274																		
1:3		:00	3.50			am 274												_					
5:0		3:30	8.50			veys 291	14 to 30	<u>)52</u>														_	
13:3		4:00	0.50		service																		
0:0		:00	10.00	DLII	l & surv	veys 305	52 to 32	259															
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0:0				7:	am drilli	ing @ 3	400			_						VVI	11	U.	_###	AL			
0:0		\dashv																		<u></u>			
0:0		\dashv		<u> </u>													_						
0:0) 	 		<u> </u>																			
Daile		-+	24.00	 																			
Dan	y Tota	<u></u>	24.00	<u> </u>				w															
											CO	STE	DATA										

<u> </u>		Engir	neering	& Supe	ervisio	n () E	XAC	ΓEr	ngin	neer	ing, Inc.	. ((9	18) 59	9-9400		
Operat			e G&O Co	of Utah,	, LLC			LYC	RII	LLI	NG	REPOR	RT	2	24 hr	s - n	nidnigl	nt to mi	dnight	
DATE 02/2	3/05	WELL Wol	lverine F	ederal 1	17-4	CONTRAC		Rig #1	11		1	OUNTY, STATE evier, UT	SPUD DATE 1/31/05	43-0	API# ∡1 _3		5	SUPERVI	sor rren Na	avlor
DAYS F/ S	PUD 4	PRESEN	T OPERATIO	ONS @ MID Drilling	NIGHT		TOTAL D	EPTH		ROGRE	ss	DRILLI	NG TIME	ROP	71-0	FORM	MATION	AUT	H. DEPTH	i
	-			Drilling			<u> </u>	3,727			68 DATA		.00	20.3	-		rapie	ויי	695	50
WT		VIS.	WL	CI		н	SAND	SOLID	S %	PV	YP		DEPTH	DATE/TIME	СНІ	LORIDI	s c	ALCIUM	OIL S	SALT PPM
9.6		32	n/c	2/3	32 8.	.8	0.50	2.8		5	12	6/10	3433	2/23/8:30	19	3,05	0 2	20000	1	17,000
	ZE MF	=G	TYPE	IADC	SERIAL I	NO.	JETS	(1/32nd*)		BITE	DATA Out	FOOTAGE	HOURS	ROP		MTR	RPM	WOB	DULL C	ONDITION
NO. 7 12.	250 SE	EC FR	XS12S	437	106866	371 2		22 2	22	2914		813	44.50	40.0			RT+MTR	45.40	ТВ	
	200 01	-0 2.0	7.0120	401	100000	" -				2914		013	41.50	19.6 #DIV/0	!	┝┤	10+120	15-40		<u>.</u>
														#DIV/0						<u> </u>
											<u> </u>			#DIV/0	!					
PUMP	MANUEA	CTURER	LINER	STROKE	GAL / STK	CDIA		DRAULI							T				PUMP	T
NO.	MANUFA		LINER	LENGTH	GAL/SIK	SPM	GPM	AV DP	AV D	- 1	UMP RESS.	MTR DIFF PRESS.	HHI	P / IN²	EC	ı a	PMP#	DEPTH 2296	SPM 67	9-Apr
1		onal	6	8.5	2.96	115	340										2	2296	77	140
2 Doth	Nati	onal	6	8.5	2.96	115	340	-												
Both			DU L 67	TINO	5.92	230	681	146	212	2 16	650	150	<u> </u>		l					
Bł	-IA	no. 7	RILL ST		O.D.	ŝ.D.	╬	FORMATIC	N N	MD		GEOLOGIC TVD		LITHOL	OGY	_		GENER RIG	AL INF	0
12-1/4"			1.	.00	12.250			Arapie	ı					Shale. Anhy,	, Lm		Rig No		Unit 11	1
DHM 1.			28		2.813		-				_						Cell N	Darren	918-	645-667
3 pt. re		nonels !	79	.20	7.938 3.500	-						GAS DATA						OP Tes		2/13
xo, 6 jts			184		0.000		BO	TTOMS UP	TIME	BG G	AS	CONN	GAS	TRIPO	SAS			OP Tes		3/12 2/23
xo,(16)	5" SWD	P, (3) 5'						GAS UNIT	s	FRO	м	SHOWS TO		ROP (F1	7HR)	_		OP Drill		2/22
Drilling (4) 5" H			32		2.250		-		_				_			_	Last O	perate F	Pipe Rai	
Total			1.027				- -				_					┈╢		perate E		
STRING	WT. B	HA WT.	PU WT.	. s	O WT.	ROT. TOP	QUE G	RD. ELEVA	TION	GL TO		KB ELEVA	TION	SURFACE			NTERME		PRODUC	2/13
110,0	00 4	5,000	120,00	00 10	5,000			5,736		17		5,75	3	13-3/8" 68pp	of @ 2	2127	9-5/8"	~ 6000	7" ~	6950
MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTION	DLS	TOOL	MD	SUR	VEYS	AZIMUTH	Т	VD	N+	/ S-	E+ / W-	SECTION	DLS	TOOL
	18.10			-583	352	680	1.65	MWD		_		148.60		349	-6		371	720	3.45	MWD
3,596	20.30	145.70	3468	-654	393	762	3.35	MWD		22 20		148.50	3	586	-69	91	416	806	0.89	MWD
FROM			LAST	24 HOURS:					DA	ILY A	CTIV	TY								
0:00		11.50		l & surv			488													
	12:00 16:30	0.50 4.50		rk on # I & surv			E00													
16:30	17:00	0.50		service		50 10 3	JU0													
17:00	0:00	7.00		l & surv		38 to 3	727													
0:00							-													
0:00																				
0:00								-												· · · · · · · · · · · · · · · · · · ·
0:00																			· · · · · · · · · · · · · · · · · · ·	
0:00																				
0:00														<u> </u>	اسا	N ==	A P=-			
0:00														- UUN		#	NTI	 		····
0:00														- •	- 14	-	444	٦٢		
			5an	n drilling	@ 380	09														, ,,,,
0:00																				
0:00						¥ .														
	otal	24.00																		

,	·	Ena	ineering	1 & St	nonvisi	on A			YAC	TC		ina										
Oper	ator:	-	ne G&O C			OII	y							ng, Inc REPO				<u> </u>	<u> </u>	99-9400		
DATE		WELL				CONT	RACT					-11/1/	_	NTY, STATE	SPUD DATE	T :	24 h		midnig	ht to m		t
	/24/05 / SPUD	PRESE	Olverine I	Federa	I 17-4		Īτ	Unit	Rig #1	11	1-2		_	/ier, UT	1/31/05	43-0			35	SUPERV	risor arren 1	Navior
	25		eam thru			2500			3,809		PROG	RESS 82		l .	ING TIME .00	ROP 16.4			Aronio	AU	TH. DEP	гн
										_	MU	D DA	ΓA			10.4	_	<u> </u>	Arapie	n	- 69	950
9.		vis. 35	n/c		ск 2/32	_{РН} 8.5		ND FO	SOLIE		PV	_	YP	GELS	DEPTH	DATE/TIME	C⊦	ILORII	DES	CALCIUM	OIL	SALT PPM
			1,70		2/32	0.5	0.	50	2.:	3	5		17	12/20	3809	2/24/09:00	1	18,0	00	1800		194,700
BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIA	L NO.			(1/32nd")		IN IN	DAT	OUT	FOOTAGE	HOURS	ROP		MTR	RPM	WOB	I DUII	CONDITION
\vdash	2.250	SEC E	BXS12S	437	10686	3671	22	$\overline{}$	TFA 22	22	291	1		800	40.50			<u> </u>	RT+MTF		7 8	
								†			231	+		893	46.50	19.2 #DIV/0		Y	40+12	15-40	₩	
																#DIV/0	_	┢			╁┼	
\vdash																#DIV/0		T		 	- -	
PUMP	T MANU	FACTURER	Lines		_ [T			RAULI	CS										SLOV	V PUM	P
NO.	IVIANO	- AUTUKEK	LINER	STROK	-1	K SPM	'	GPM	AV DP	AV	ı	PUMP		MTR DIFF	ннг	P / IN²	EC	CD	PMP#	DEPTH	SPM	PSI
1	Na	itional	6	8.5	2.96	115	;	340		\vdash		PRESS.	-	PRESS.					1	2296	67	9-Apr
2	Na	tional	6	8.5	2.96	115	_	340			\top		 						2	2296	77	140
Both	<u> </u>				5.92	230		681	133	19	94	1650		150	133.2	2/1.127	_	\neg			<u> </u>	1
	ВНА	no. 7	DRILL ST		O.D.	n	D.	T_						EOLOGIC						GENER	AL IN	0
12-1/4	" Bit			.00	12.250	"	D	┦~~	Arapier			/ID		TVD		LITHOLO				RIG	INFO	
DHM 1	.25 de	9	22	.00	2.813			忊	,p.(0)				-			Shale. Anhy,	Lm	-	Rig No	Darren	Unit 1	
8411	DI IO O			_ _	7.938															OP Tes		645-6671 2/13
		monels, SWDP			3.500	 		BOT	TOMS UP	TIME	BG	GAS		GAS DATA CONN G	AS	TRIP G	AS			OP Tes		3/12
		OP, (3) 5	184. 576.			_		Ł					<u> </u>	SHOWS					Last S	afety M	eeting	2/24
Drilling			32.		2.250			╫╌	GAS UNITS	s	FR	ОМ		ТО		ROP (FT/	HR)	킈		OP Drill		2/24
(4) 5" H	HWDP		118.	76				T		\dashv										perate F perate B		
Total STRING		BHA WT.	1,015. PU WT.		SO WT.	ROT. T	20011												Last O	perate A	\nnula	2/13
110,0		45,000	120,00		05,000	KO1. 1	JAQUE	GKL	5,736	ION	GL To			KB ELEVA 5,753		SURFACE C		3	INTERME	DIATE CSC	PRODU	CTION CSG
												VEY:	<u> </u>	0,700		13-3/8" 68ppf	@ 2	124	9-5/8"	~ 6000	7" ~	6950
мD 3,344		AZIMUTH 156.60		N+/S- -583	E+/W-		_	DLS	TOOL	МЕ		NCL.	Α	ZIMUTH	ΤV		N+ /	S-	E+ / W-	SECTION	DLS	TOOL
		145.70		-654	352 393	680 762	_		MWD MWD	3,4	70 1	9.50		48.60	33-		- 61	-	371	720	3.45	MWD
							<u>_</u> _	.00	INIVAD			ACTIV		48.50	35	86	-69)1	416	806	0.89	MWD
FROM	5,00	5.00		4 HOURS																····		
0:00 5:00	5:00 6:00	5.00 1.00			veys 372 o sweep		3809)														
6:00	11:00				wiper tr		eck i	noto	r & pro	Seir	e los	e .							-			
11:00	16:00		Cha	nge m	otor MV	<u>رة, ح.ب.</u> VD <u>,</u> L[) sta	bilize	er chec	k bit	0 103	3										
16:00	18:00		RIH	to sho	е																······································	
18:00 19:00	19:00 19:30				drilling li	ne																
19:30	0:00	4.50		to 238 h & re	am thru	sidef	ack	2385	5 to 250	00												
0:00				10	an unu	Jiucii	aun	2000	, iO 25(00												
0:00												-										
0:00																						
0:00					·											AAU		_				
0:00																_UVN	-//	Æ	NTL			
0:00					······································													-	11/	71_		
0:00			6am	Wash	& Rear	n @ 3	764											······································				
0:00																						
Daily T	otal	24.00																				
	- 151	27.00									A											
AF	E DHC	s	2 27	6 57 <u>9</u>		DAI	V	4110	•	C	UST	DATA	1				_					

,		. Engi	neering	& S	upervis	ion (E	XAC	T	Eng	gin	eer	ing, Inc	- · · · · · · · · · · · · · · · · · · ·			(9	918) 59	9-9400		
Opera	ator:	Wolverin	e G&O C											REPO			24 hr			ht to mi		
DATE 02/	25/05	WELL Wo	lverine F	eder	ral 17_4	CON	TRAC		t Rig #	111	1		1	UNTY, STATE	SPUD DATE		API#			SUPERV	SOR	
DAYS F	SPUD			ONS @	MIDNIGHT			TOTAL	DEPTH	111		GRE		evier, UT DRILL	1/31/05 ING TIME	43-0 ROP	141-3		35 RMATION		Irren N	
	26			Drilli	ing				4,024				15	15	5.50	13.9		<u>L</u>	Arapie	n	698	50
w	г	VIS.	WL		СК	PH	S	AND	SOL	IDS 9		יי ו טנ	DATA YP	GELS	DEPTH	DATE/TIME	СН	LORIE	DES C	CALCIUM	OIL S	SALT PPM
9.	8	30	n/c		2/32	7.5	_ (.50	4	.0		3	6	4/7	3865	2/25/12:00	11	14,0	00	2560		88,100
BIT :	SIZE	MFG.	TYPE	IAD	C SERIA	AL NO.	1	JETS	(1/32nd")			IT D	ATA OUT	FOOTAGE	HOURS	ROP		MTR	RPM	WOB		
NO. 7 12	2.250	SEC E	3XS12S	COD		0074	-	$\overline{}$	r TFA									L	RT+MTR		T B	G
<u> </u>	230	350 51	0/01/20	43	7 1068	6671	22	+	22	22	29	14		1108	62.00	17.9 #DIV/0	\J	Y	40+120	15-40		<u> </u>
			****					\top						+		#DIV/0				 		
																#DIV/0						
	Т								DRAUL	_										SLOW	/ PUMF	· · · · · · ·
PUMP NO.	MANU	JFACTURER	LINER	STRO	OKE GAL/S	TK! SF	М	GPM	AV DE	٦	AV DC		JMP ESS.	MTR DIFF PRESS.] нн	P / IN²	EC	D	PMP#	DEPTH	SPM	PSI
1	N	ational	6	8.5		1.	15	340		十		PRI	E33.	PRESS.					2	2296 2296	67 77	9-Apr 140
2	N	ational	6	8.5			15	340														140
Both					5.92	23	30	681	133		194	17	700	200		2/1.127						
	ЗНА	no. 7	LENGT		G O.D.	1	I.D.		FORMAT	ION		MD		GEOLOGIC TVD		LITHOL	nev			GENER		0
12-1/4	" Bit		1	.00	12.25	0			Arapi							Shale. Anhy			Rig No		Unit 11	1
DHM ·	1.25 de	g	22	.00	2.81			_		_									Cell N	Darren	918-	6 45-66 71
float U	BHO :	2 monels,	70	.66	7.93 3.50	_		┺						GAS DATA						OP Tes		2/13
		SWDP	184		0.00	1		BC	TTOMS	JP TII	ME E	G GA	AS	CONN	SAS	TRIP	SAS			OP Tes		3/12 2/25
xo,(16)5" SW	DP, (3) 5	576	.80				Œ	GAS UN	ITS		FROM	1	SHOWS TO		ROP (F1	T/HR)			OP Drill		2/24
Drilling				.61	2.25	0		- -			_								Last O	perate F	Pipe Ra	2/24
(4) 5" Total	BHA:		1,015			+		╢			-									perate E		
STRING	WT.	BHA WT.	PU WT		SO WT.	_	TORC	<u></u> G	RD. ELEV	ATIO	N G	L TO I	КВ	KB ELEV	ATION	SURFACE	CASIN	G	Last C	perate /	PRODU	2/13 TION CSG
110,0	100	45,000	120,00	00	105,000	<u> </u>	_		5,736	3		17	(-V()	5,75	3	13-3/8" 68pp	of @ 2	2127	9-5/8"	~ 6000	7" ~	6950
MD		AZIMUTH		N+ / 5	S- E+/W	- SEC	TION	DLS	TOOL		MD	INC	EYS CL.	AZIMUTH	Т	VD	N+ /	/S-	E+ / W-	SECTION	DLS	TOOL
3,780 3,969		0 152.30		-70			-	1.65	MWE													
3,969	19.5	0 146.50	3819	-76	2 459	88	38	0.52	MWE		B A TU S						l			<u> </u>		<u> </u>
FROM		Ţ	LAST	24 HOL	JRS:						DAIL	YA	CTIVI	IY								
0:00	1:30			ILD																		
1:30 5:00	5:00 6:00		Wa		ream th	ru tigl	nt ho	ie 28	10 299	1 7,												
6:00	7:30				# 2 pun	np, R	epla	ce po	p off													
7:30	8:30		Wa	sh &	ream 60	to b	tm.															
8:30 0:00	0:00	15.50	Dril	I & St	urveys 3	809 t	0 40	24													-	
0:00	 								·													
0:00	<u> </u>																					
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0:00		 				-	<u>-</u> -	·					·			<u> </u>	n =	TD				•••
0:00													····			UNI-II	IJF	N	Tixi			
0:00	<u> </u>	ļ															_	1		<u> </u>		
0:00		-	6an	n drill	ling @ 4	100																
3.00																-						
Daily	Total	24.00																				
											CO	STI	DATA						-	-		

		Engi	neering	ı & Su	pervisio	on 🜓		EX	AC	ΓEn	air	neeri	ing, Inc					918) 50	9-9400)	
Opera			e G&O C				D						REPO			24 hı			ht to m		·
DATE 02/	26/05	WELL	duante - 1	- a at .	147 :	CONT	RACTO	R		-		CO	UNTY, STATE	SPUD DATE		API#	:		SUPERV		
DAYS F			Iverine I			<u></u>		Jnit R			ROGRE		evier, UT	1/31/05 ING TIME	43-0 ROP	41-3		35 RMATION		TH. DEPT	
	27			RIH			\perp	4,	200		1	76		5.50	11.4		ı	Arapie			50
										N	UD	DATA									
9.9		vis. 30	n/c	- ,		PH 9.0	SAN		SOLIDS		PV	YP	GELS	DEPTH	DATE/TIME	-	LORII		CALCIUM	OIL	SALT PPM
			1 1//0		2/32 3	9.0	0.5	0	4.0		3	PATA	4/7	4108	2/26/8:30	12	22,0	00	2560	<u> </u>	201,300
BIT S	SIZE N	MFG.	TYPE	IADC CODE	SERIAL	NO.		JETS (1/3 or TF		<u> </u>	IN	OUT	FOOTAGE	HOURS	ROP		МТБ	RPM RT+MTR	WOB	DULL T B	CONDITION
			3XS12S	437	10686	671	22	22	2	22 2	914	4200	1286	77.50	16.6		Υ		15-40		
8 12	.250 S	EC E	3XS16S	437	<u> </u>		22	22	2	22 4	200				#DIV/0)!					
					 			-	4	_ _		<u> </u>	<u> </u>		#DIV/0)!					
Ш_					<u> </u>			<u> </u>				<u> </u>			#DIV/0	į					
PUMP	MANUE	ACTUDED	Luisa		.	1	_	HYDR			_			r-					SLOV	V PUM	5
NO.	WANUF	ACTURER	LINER	STROKI		K SPM	٩	SPM	AV DP	AV DC		UMP	MTR DIFF	НН	P/IN²	EC	CD	PMP#	DEPTH	SPM	PSI
1	Na	tional	6	8.5	2.96	115	3	40			PR	ESS.	PRESS.	 		-		2	2296	67	9-Apr
2	Nat	tional	6	8.5	2.96	115	_	40			T					 	\dashv		2296	77	140
Both					5.92	230	6	81	133	194	17	700	200	133.2	2/1.127				 	<u> </u>	-
		_	RILL ST										GEOLOGIC	3			-		GENER	AL IN	-0
12-1/4	BHA	no. 7	LENGT		0.D.	1.1	D.	1	RMATIO •		MD	T	TVD		LITHOL	OGY				INFO	<u> </u>
	.25 dec	1		.00	12.250 2.813	+		╟──	rapier	-				·	Shale. Anhy,	, Lm		Rig No		Unit 1	
		,		-	7.938			╟──											Darren		645-6671
float,U	BHO, 2	monels,	79	.66	3.500	┼		ВОТТ	MS UP	TIME	BG GA	L	GAS DATA CONN G	242	7515.0				OP Tes		2/13 3/12
xo, 6 jt	s 6-5/8	SWDP	184	.27							50 0,		CONTRO	27.3	TRIPG	AS			afety M		2/26
		P, (3) 5	 					G/	S UNITS	S	FRO	м	SHOWS TO		ROP (FT	/HR)			OP Drill		2/24
Drilling				.61	2.250	 						_						Last O	perate F	Pipe Ra	2/26
(4) 5" I Total			118 1,015			ļ		 -				_					_	Last O	perate E	Blind Ra	2/26
STRING		SHA WT.	PUWT		SO WT.	ROT. TO	ORQUE	GRD.	ELEVAT	ION (GL TO	КВ	KB ELEVA	TION	SURFACE (CASING	<u>.</u>		perate		2/13
130,0	000 4	15,000	200,00	00 1	00,000	40	00		,736		17		5,753	3	13-3/8" 68pp				~ 6000		6950
	Livia	T								S	URV	/EYS									
мD 4,000		145.30		N+/S- -771	465	SECTIO 899	_		/WD	MD	IN	CL.	AZIMUTH	Т	VD	N+ /	S-	E+ / W-	SECTION	DLS	TOOL
4,167		143.70		-815	496	953			/WD		+										
					'			''		DAII	ΥΔ	CTIVIT	Υ								
FROM				24 HOUR								J V 1 1	•								
0:00	13:30				veys 40	024 to	4170)													
13:30 14:00	14:00 16:00			servic	e veys 41	70 to	1200														
16:00	19:00				POOH 1		- ∠∪∪														
19:00	22:30				it motor													 .			
22:30	0:00	1.50	RIH																 -		
0:00		ļ	-																		_
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0:00															-LUN/	-//)	F	NTH	1		
0:00															<u> </u>	···	 	† /-	14		
0:00			6am	drillin	ig @ 42	78															
0:00																					
Daily T	otal	24.00										·									
												NATA.									

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<u> </u>		•	Engin	ieering	& Sup	ervisio	n						ing, Inc				(9	918) 59	9-9400		···
	rator:			e G&O C	o of Utah	, LLC			'ITA I	DRIL	_ <u>L</u> l	NG	REPO	RT	2	4 hr	's - 1	midnigh	nt to mi	dnigh	t
DATE	2/27/0!	- 1	WELL MAI	·			CONTRA					1	OUNTY, STATE	SPUD DATE		API#			SUPERVI		
	E/ SPUD				Federal		<u> </u>		it Rig #1		ROGR		evier, UT	1/31/05 LING TIME	43-04 ROP	11-3		35 RMATION		rren N	
	28				Drilling	J			4,600			400		9.50	20.5		ı	Arapier)50
										F	NUD	DATA	· · · · · · · · · · · · · · · · · · ·				<u>—</u>	, ,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<u></u>		
	WT	_	VIS.	WL				SAND	SOLIE		PV	YP	GELS	DEPTH	DATE/TIME	CHL	LORIC	DES C	CALCIUM	OIL	SALT PPM
	9.8	<u></u> :	30	n/c	2/	/32 7.	'.5	0.50	3.0	6	3	7	4/6	4330	2/27/08:00	12	28,00	00	3680		211,200
BIT	SIZE	MFG	-	TYPE I	IADC	SERIAL I	-10-1	(ET	C (4100 mdf)			DATA					_				
NO.	- SILL		<u>"</u>	I I F L	CODE	SERIAL:	NO.		S (1/32nd") or TFA		IN	OUT	FOOTAGE	HOURS	ROP	_	MTR	RPM RT+MTR	WOB	DULL T E	CONDITION G
8 1	12.250	SEC	C EB	3XS16S	437	106871	152 2	22	22	22 4	4200	<u>. </u>	400	19.50	20.5		Υ	20+120	15-40		
		 	- -			<u> </u>						<u></u>			#DIV/0!						
+		₩	+		<u> </u>	 	——			-					#DIV/0!						
ㅗ		<u></u>	<u> </u>			<u> </u>									#DIV/0!						
								HY	DRAUL	ics	_								SLOW	PUM	Р
PUMI		ANUFAC	TURER	LINER	i	GAL / STK	SPM	GPM	I AV DP	AV DC		PUMP	MTR DIFF	HH	P/IN²	EC	,D	РМР#	DEPTH	SPM	PSI
NO. 1		Natio		6	LENGTH	2.06	115	1 340	+-	+	PF	RESS.	PRESS.	 			_	1	2296	67	9-Apr
2		Natio		6	8.5 8.5	2.96	115 115	340 340		+	+	-+					\dashv	_ 2	2296	77	140
Bott		IVALLE	ilai	ا	0.5	5.92	230	681		194	+	1700	200	1221				 		ļ	
<u> </u>	''			RILL ST	TDING	0.02		001	100	134	<u> </u>	700	200		2/1.127			<u> </u>			<u> </u>
	ВНА		no. 7	LENGTI		O.D.	I.D.	+	FORMATIO	ON	ME	ı D 	GEOLOGI TVI		LITHOLO	igy	\dashv		GENER RIG	AL IN	FO
12-1/	/4" Bit			1	1.00	12.250			Arapie						Shale. Anhy, I			Rig No		Unit 1	11
DHM	1.25	deg		22	2.00	2.813													Darren		-645-6671
				<u> </u>		7.938		_											OP Tes		2/13
	UBHO	· · · · · · ·			9.66	3.500		B	OTTOMS UP	TIME	BG G	SAS	GAS DATA CONN		TRIP GA	AS		Next B	OP Tes	t	3/12
	jts 6-5			184			<u> </u>	_ -					SHOWS					Last S	afety Me	eting	2/27
	6)5" S\		, (3) 5	† — —		2.250	 	#	GAS UNIT	rs	FRO	JM	TO	5	ROP (FT/	HR)	\exists	Last B	OP Drill		2/24
	ng jars " HWD				2.61	2.250		\dashv		+		-					_		perate P		
	al BHA		$\overline{}$	118 1,015				$ \vdash$		-		+							perate B		
	NG WT.		A WT.	PU WT.		SO WT.	ROT. TOR	₹QUE C	GRD. ELEVA	TION	GL TC	о кв	KB ELEV	/ATION	SURFACE CA	ASINO	<u></u>	Last U	perate /	Annula PRODU	IT 2/13 JCTION CSG
145	,000	45.	,000	220,00	00 11	10,000	400		5,736		17	7	5,75	53	13-3/8" 68ppf	@ 2	2127				~ 6950
											SUR	VEYS					_				
мD 4 19	$\overline{}$		145.30	TVD 4037	N+/S- -823	502	SECTION 963	DLS 1.79				INCL.	AZIMUTH		TVD	N+ /			SECTION		TOOL
				4216	-873	535	1023	0.78		4,293 4,514			146.00 147.10		126 335	-84		518 557	992	0.20	T
- , -							,040		110000			ACTIVIT		40	135	-90	18	557	1064	0.52	MWD
FROM		耳		LAST	24 HOURS:	:				DAII	<u></u>	10 HALL	<u> </u>	<u>,, , , , , , , , , , , , , , , , , , ,</u>							
0:00			1.50	RIH							_										
1:30			1.00			am 414										_					
2:30			10.50			eys 42											_				
13:0			1.50						i. press	loss, d	coul	d not fi	ind anythin	ig							
14:3 16:0			1.50			eys 44					-										
16:3			7.50			∠ pump, ⁄eys 44			psi. pre	esol es	s, F	ound p	iece of rub	ber.							
0:00		10	7.50	Dilli	A SUIV	eys 44	70 10 4	600			—										
0:00		+																			
0:00		十																			
0:00																					
0:00)	I																			
0:00	厂														A a . .						
0:00				<u></u>													N	AITI	11		
0:00		+													PILOP		兀	WIYE.	41_		
0:00		+																			
0:00	+	+	\longrightarrow																		
Dails	/ Total	. .	24.00																		
Dany	TOtal		24.00																		
										C/	OST	DATA									

	,		Enai	neering	ı & Su	pervisi	on 4		F)	XAC.		na	ino	orie	ng, Inc		_					 -	
Op	erator			ne G&O C											REPO			041			9-9400		
DATI			WELL				CONT	RACTO							NTY, STATE	SPUD DATE	<u> </u>	24 hi		midnig	ht to mi		t
	2/28/0 F/ SPU		PRESE	olverine NT OPERAT	Federa IONS @ N	I 17-4 MIDNIGHT			Unit	Rig #1	11	PROG	RESS	Sev	rier, UT	1/31/05	43-0)41-3					Naylor
<u> </u>	29		<u>l</u>		Drillin	ng				5,083			483		ì	8.50	ROP 20.6		1	RMATION Arapie	- 1	H. DEP	гн 950
	wr	_										MUI	D DA	ľΑ						rapio	<u>'' </u>		
	0.0	+	vis. 29	n/c			_{РН} 8.8	0.5		SOLID		PV		YP	GELS	DEPTH	DATE/TIME	СН	LORI	DES (CALCIUM	OIL	SALT PPM
—		 -		1.00		2702	0.0	- 0.0	00	3.5	2	3	DAT	4	2/3	4790	2/28/8:45	14	44,0	00	3320		273,600
BIT NO.	SIZE	М	FG.	TYPE	IADC	SERIA	L NO.			1/32nd")	_	IN		OUT	FOOTAGE	HOURS	ROP		MTR	RPM	WOB	וווות	CONDITION
\vdash	12.250	0 s	EC E	3XS16S	437		7152	22		1FA 2 2	22	420	_		000	10.00			<u> </u>	RT+MTR		TE	
					10.	1000	132		┯		22	420	-		883	43.00	20.5		Y	20+120	15-40		
									1	7			╁				#DIV/0		┝				-
ᆜ																	#DIV/0		_		-	\vdash	
L.									HYD	RAULI	cs										SLOW	PUM	- <u>'</u>
PUN	1	1ANUF	ACTURER	LINER	STROK		K SPM		ЭРМ	AV DP	ΑV	- 1	PUMP		MTR DIFF	ння	o ∖ IVs	EC	CD	PMP#	DEPTH	SPM	PSI
1	+	Nat	ional	6	LENGTI 8.5	2.96	115	+	340		_	- '	PRESS.	<u> </u>	PRESS.					1	2296	67	9-Apr
2			ional	6	8.5	2.96	115	_	340		 	-+		\vdash				<u> </u>	_	2	2296	77	140
Bo	h					5.92	230		81	133	19	94	1700	+	200	133 2	/1.127				 		-
				RILLS					T					_	EOLOGIC		, 1.12,	L			GENER	AT IN	-0
12-1	вна /4" Bit	•	no. 7	LENGT		O.D.	l.	D.	1	ORMATIO	_	N	/ID		TVD		LITHOL	OGY				INFO	0
	1.25				.00	12.250 2.813	+		 '	Arapien	┷┤			_			Shale. Anhy,	Lm		Rig No		Unit 1	
						7.938	+		╟		┪			-					긕		Darren		645-6671
float	UBHC), 2 r	nonels,	79	.66	3.500			ВОТ	TOMS UP	TIME	BG	GAS	<u> </u>	GAS DATA CONN G	AS	TRIP G	.AC			OP Tes		2/13 3/12
			SWDP	184													TKIF G	AS	\neg		afety Me		2/28
			P, (3) 5'				ļ			SAS UNITS	7	FR	ОМ		SHOWS TO		ROP (FT	/HR)			OP Drill		2/28
	ng jars ' HWE			118	.61	2.250	 	····	├		_		<u> </u>	ļ							perate P		
· / ·	al BH/			1,015			-		├		-			-					_		perate B		1
	IG WT.	В	HA WT.	PU WT		SO WT.	ROT. TO		ĞR	D. ELEVAT	ION	GL T	ОКВ		KB ELEVA	TION	SURFACE (CASINO	3	Last O	perate /	PRODU	r 2/13 CTION CSG
	55	<u> </u>	45	265		125	40	00	<u> </u>	5,736			7	<u></u>	5,753		13-3/8" 68рр	f @ 2	127	9-5/8"	~ 6000	7" -	- 6950
MD	iN	NCL.	AZIMUTH	TVD	N+/S-	E+/W-	SECTIO	N D	LS	TOOL	ME		NCL.	_	AZIMUTH	T\	,						
			147.60		-968	596	1136					29 1			147.60	46		-99		613	SECTION 1167	0.74	MWD
4,92	4 20	0.30	150.10	4722	-1023	630	1200) 1.	10	MWD					149.50	48	10	-10	_	646	1232	0.31	MWD
FRO	1]			LAST	24 HOUR:	S·					D/	AILY A	ACTIV	VITY									
0:0) 15	5:00	15.00			veys 46	00 to	4939									_						
15:0		5:30	0.50	Rig	servic	е											<u> </u>						
15:3		:00	8.50	Drill	& sur	veys 49	939 to	5083	3														
0:00			+																				
0:00		-																					
0:00											-					· · · · · · · · · · · · · · · · · · ·							
0:00															 .		-						
0:00																							
0:00						- 6 - 5	24																
0:00	-	-+		bam	arillin	g @ 519	J 1																
0:00	+	\dashv					-															_	
0:00																	- 	FI	NE	NTI	 		
0:00																	VVII	H-H	V.	. 	AL-		
0:00	_																						
0:00	+	\dashv																					
Daily	Total	$\neg \uparrow$	24.00															-					
												OST	DAT.										
	VEE B		_								U	,US1	DAT	Α									

		Engi	neering	ı & Suj	pervisio	on (9	E	XAC	TE	Eng	ine	eriı	ng, Inc.		•		/9	18) 50	9-9400)	
Opera	itor:	Wolverin	e G&O C	o of Uta	h, LLC									REPOI			24 hı			ht to m		
DATE	01/05	WELL	ا د ساس د دا		47.4	CON	TRAC	FOR				T	COU	NTY, STATE	SPUD DATE		API#		manng	SUPERV		
DAYS F/			Iverine I					Unit TOTAL D	Rig #1	11	PRO	GRESS		vier, UT	1/31/05 NG TIME	43-0 ROP	<u>)41-3</u>		MATION		TH. DEPT	
	30	<u> </u>		Drilling	9				5,389			306	<u> </u>	23	.50	13.0		į.	Arapie		69	
WT		VIS.	WL	r	ск Т	PH		AND	I soli)C ()		D DA		T								
10.	1	29	n/c			9.0		.50	3.		P)	_	7P	GELS 3/4	5223	3/1/09:15	_	10RID		3240	 	SALT PPM
				-							Bl	T DA	ĪΑ		1 0220	0/1/00.10		,,,,,,		3240		78,850
BIT S NO.	IZE N	MFG.	TYPE	IADC CODE	SERIA	L NO.			(1/32nd") r TFA		II.	1	OUT	FOOTAGE	HOURS	ROP		MTR	RPM RT+MTR	WOB		ONDITION
8 12	.250 S	EC E	3XS16S	437	10687	7152	22	_		22	420	00		1189	63.50	18.7		Υ	20+12	+	ТВ	G
					 			_								#DIV/0)!					
<u> </u>	-							+						ļ	<u> </u>	#DIV/0					L [_	
 - -									DRAUL	ice.					<u></u>	#DIV/0)!	Ш		<u> </u>		<u> </u>
PUMP	MANUF	ACTURER	LINER	STROKE	GAL / ST	K SP	м	GPM	AV DP	T	/ DC	PUMP	.	MTR DIFF	ن	P / 1N²	Γ.		6.4-:		PUMP	
NO.	<u> </u>			LENGTH								PRESS		PRESS.	HH	F / 4IN	EC	יי	PMP#	2296	<u> SPМ</u> 67	9-Apr
1		tional	6	8.5	2.96	11		340			\Box								2	2296	77	140
2 Both	Na	tional	6	8.5	2.96	11	$\overline{}$	340	1	-			_									
Dour	L		RILLS	TDING	5.92	23	0	681	133	1	94	1700		200		2/1.127	<u> </u>			<u> </u>	L	L
В	HA	no. 7	LENGT		O.D.		I.D.	+	FORMATIO	NC		MD		GEOLOGIC TVD		LITHOL	OGY			GENER	AL INF	0
12-1/4'				.00	12.250				Arapie	n						Shale. Anhy,			Rig No		Unit 11	1
DHM 1	.25 deg)	22	2.00	2.813	-		- -					4_						Cell N	Darren	918-0	345-6671
float,U	3HO, 2	monels.	79	.66	7.938			-	-				<u> </u>	GAS DATA				_	·····	OP Tes		2/13
xo, 6 jt			184		0.000			- BO	TTOMS UF	TIME	BC	GAS	+	CONN G	AS	TRIP G	SAS	\exists		OP Tes		3/12
		P, (3) 5'	576	.80					GAS UNIT	ŝ	F	ROM		SHOWS TO		ROP (FT	/HR)	\exists		OP Drill		3/1 2/28
Drilling (4) 5" H	-			.61	2.250			_											Last O	perate F	ipe Rai	
Total			118 1,015	\rightarrow		 		╬					+-		-			4		perate E		2/26
STRING	WT.	BHA WT.	PU WT		SO WT.	ROT.	TORQ	UE GF	RD. ELEVA	TION	GL	то кв	\perp	KB ELEVA	TION	SURFACE (CASING	3	Last C	perate /	Annular	2/13 TION CSG
155		45	265		125	4	100		5,736		<u></u>	17		5,753	3	13-3/8" 68pp	f @ 2	127	9-5/8"	~ 6000	7" ~	6950
MD	INCL.	AZIMUTH	TVD	N+ / S-	E+ / W-	SECTI	ION	DLS	TOOL	П м	SU	RVEY	_	AZIMUTH	-	VD I		à 1				
		149.50		-1051	646	123	_	0.31	MWD					7.12.1410 111		VB	N+ /	*	E+ / W-	SECTION	DLS	TOOL
5,301	20.50	154.30	5075	-1137	694	132	21	1.20	MWD	<u> </u>												
FROM			LAST	24 HOURS	:					D.	AILY	ACT	IVITY									
0:00	13:30	13.50			eys 50	83 to	528	35														
13:30	14:00	0.50		service				-														
14:00 0:00	0:00	8.50	Dril	& surv	eys 52	285 to	53	89														
0:00				· · · · · · · · · · · · · · · · · · ·																		
0:00											_											
0:00																						
0:00			·																			
0:00									-						·							
0:00			6an	n drilling	g @ 54	43																
0:00																						
0:00				-													T = -					
0:00			. ,													CONF	IN.	W.	TIAIT	ļ		
0:00	*															ANIII	IVL	<u>! \</u>		_		
0:00																						
	-1	00.55																				
Daily T	otal	22.50			·																	
											cos	T DA	ΤA									

		. Engi	neering	7 & S	upervis	ion 🗗		ΞΧΔΩ	TF	- - -	nine		ng, Inc								
Oper	ator:		ne G&O C										REPO			24 6			9-9400		
DATE	04/05	WELL	ali conin o	r	-1.47.4	CONTR	ACTOR						NTY, STATE	SPUD DATE	· ·	API#		mianig	ht to m		<u> </u>
DAYS F			Olverine NT OPERAT					it Rig #1	111	PRO	OGRESS		vier, UT	1/31/05 ING TIME	43-0	041-3				arren N	
	33	<u> </u>		WO	С			5,851			0			.00	#DIV/	0!	1	RMATION WIN Cre		TH. DEPT 69	
W	-	VIS.	110							Μl	JD D	ATA			-						
10.		32	n/c	: +	ск 2/32	7.5	SAND 0.50	SOLII		 	•∨ 4	YP	GELS	DEPTH	DATE/TIME		LORII		CALCIUM	OIL	SALT PPM
							0.00	<u> </u>			T DA	12	5/8	5578	3/3/08:30	17	70,0	00	2600		280,500
BIT S	SIZE	MFG.	TYPE	IADO		IL NO.		S (1/32nd") or TFA		_	N	OUT	FOOTAGE	HOURS	ROP		МТБ	RPM	WOB	DÜLL	CONDITION
						_		JI IFA		 	\dashv		 		#DIV/0) I	l .	RT+MTR	45.40	T B	
													 		#DIV/0			20+120	15-40	2 2	1 1
┝┿				<u> </u>	_										#DIV/0		_			\vdash	
				<u> </u>											#DIV/0)!					
PUMP	MANUE	ACTURER	LINER	STROI	KE GAL/S	.J	$\overline{}$	DRAUL	$\overline{}$			—							SLOV	V PUMI	5
NO.			LINER	LENGT	-	TK SPM	GPM	AV DP	AV	DC	PUMI	- 1	MTR DIFF PRESS.	HHF) / IN²	EC	D	РМР#	DEPTH	SPM	PSI
1	Na	tional	6	8.5	2.96		0	1	-		PRES	-	PRESS.			-		1			
2	Na	tional	6	8.5	2.96		0								_	_	\dashv	2			
Both	<u> </u>		<u></u>		5.92		0														-
В	HA	no. 7	RILL ST		O.D.	[] I.D.		505144					GEOLOGIC	:					GENER	AL IN	0
12-1/4	' Bit			.00	12.25		╌╢╌	FORMATIO		_	MD	+	TVD		LITHOLO					INFO	
DHM 1	.25 deg)	22	.00	2.81	3		Twin Cre	-	5	,796	\dagger	5.54		Shale. Anhy,	, Lm	\dashv	Rig No	Darren	Unit 11	-
					7.93	3								-	· · · · · · · · · · · · · · · · · · ·		ᅦ		OP Tes		645-6671 2/13
float,Ul xo, 6 jt				.66	3.50	9	BC	TTOMS UP	TIME	В	G GAS		GAS DATA CONN G	AS	TRIP G	AS			OP Tes		3/12
		OP, (3) 5'	184 576			├						<u> </u>	SHOWS					Last S	afety Me	eting	3/4
Drilling		., (0) 0		.61	2.250			GAS UNIT	S	F	ROM	\mp	TO		ROP (FT	/HR)			OP Drill		3/2
(4) 5" F	IWDP		118	.76					_	_		+					\dashv		perate P		
Total STRING		SHA WT.	1,015		SO WT.	ROT. TOP									 		┪		perate B		
175		45	280		139	480	——	RD. ELEVAT 5,736	TION		то кв 17	-	KB ELEVA		SURFACE C			INTERMED	IATE CSG	PRODUC	TION CSG
											RVE	75	5,753		13-3/8" 68pp	f @ 2	127	9-5/8"	- 6000	7" ~	6950
MD 5,585		AZIMUTH 162.40		N+/S-		SECTION	DLS	TOOL	М		INCL.	_	AZIMUTH	TV	D	N+ / :	S-	E+/W-	SECTION	DLS	TOOL
5,774		166.40	-	-1228 -1285		1427 1483	0.75	MWD	5,6		17.90		163.90	543		-125	58	739	1456	2.00	MWD
		7.00.10	0021	1200	7 740	1403	1.20	MWD					167.30	558	51	-129	94	748	1491	1.00	MWD
FROM			LAST 2	24 HOUR	S:				UF	AILY	ACI	IVITY					_				
0:00 4:00	4:00 6:00	4.00			run pipe																
6:00	7:00	2.00 1.00			onal ass bushing				<u> </u>												
7:00	9:00	2.00			ng. Crev		ng noc	1											·		
9:00	18:00	9.00	Safe	ety me	eting, F	U & rur	133 jt	s. 47# F	2110	LT	&C 9	5/8"	intermedia	ate csng S	Set @ 582	3'					
18:00	19:00	1.00	Rig	down	csng. C	rew									w 00Z						
	19:30 21:30	0.50 2.00		. Csn				• • • •													
21:30	0:00	2.50	Sare WO	uy me C. Flo	eting, C at did n	ement o	csng. V	Vith 470) sks	. 50	/50 p	os. 1	3#_1.71 y	ield ceme	nt						
0:00			.,,,,	J. 1 10	at ala H	or HOIG															
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www.exactengineering.com

415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

Steven R. Hash, P.E. Registered Professional Engineer stevehash@exactengineering.com

CONFIDENTIAL PLEASE!

CONFIDENTIAL

March 22, 2005

Mr. Dustin Doucet Utah Division of Oil, Gas & Mining 1594 West North Temple, Suite 1210 Salt Lake City, UT 84114-5801

Re:

Wolverine Federal 17-4 well

Sec 17 T23S R01W Sevier Co., UT API# 43-041-30035

Dear Mr. Doucet,

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed daily drilling reports for the subject well from March 7, 2005 through March 12, 2005. Production casing was run and cemented on March 11, 2005 and the rig released to the next well on March 12, 2005. Well completion is estimated to begin in July 2005 upon completion of drilling the remaining wells from this drill pad. We respectfully request that the enclosed information remain confidential.

Very Truly Yours,

Steven R. Hash

Consulting Engineer for Wolverine Gas and Oil Company of Utah, LLC

copy without enclosures via email to:

Wolverine Gas & Oil Co of Utah, LLC: Richard Moritz, Sue Benson

EXACT Engineering, Inc.

well file

RECEIVED

MAR 2 4 2005

DIV. OF OIL, GAS & MINING

CONFIDENTIAL

Petroleum Engineering Consulting, Personnel & Jobsite Supervision complete well design, construction & management, drilling, completion, production, pipelines, appraisals, due diligence, acquisitions, procedures, temporary personnel and field supervision

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			Engir	eering	& Sup	ervisio	n							g, Inc.				(9	18) 59	9-9400		
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	3/09	/05		lverine l	Federal	17-4	CONTRA		t Rig #1	11			_	TY, STATE	SPUD DATE	42.0	AP#			SUPERVI		
	F/ SP	UD			IONS @ MI		L		DEPTH		PROG		Sev	ier, UT	1/31/05 NG TIME	43-0 ROP	141-3		RMATION		rren N	
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ME	-	INCL.	AZIMUTH	TVD	N+/S-	E+/W-	SECTION	DLS	TOOL	MD	Ŧ	INCL.		AZIMUTH	1	VD	N+	/ S-	E+ / W-	SECTION	DLS	TOOL
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FRC	м			LAST	24 HOURS	3:				DA	ILY .	ACTI	VITY									
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DAYS	36		PRESEN	IT OPERATI	ıons @ N Drillir			ו	OTAL D	ертн 3,765		PRO	GRESS 570		i	NG TIME .00	ROP 23.8			MATION Navajo	- 1	H. DEPT	
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Form 3160-5 (April 2004)	DEPART	UNITED STATES MENT OF THE	INTERIO				FORM APPROVED OM B No. 1004-0137 Expires: March 31, 2007
		JOF LAND MAN				5. Lease Serial UTU-735	
Do no	t use this form	CES AND REI for proposals (Form 3160-3 (to drill or	to re-	enter an		Allottee or Tribe Name
	T IN TRIPLICA	TE- Other inst	ructions o	n reve	rse side.	7. If Unit or	CA/Agreement, Name and/or No.
1. Type of Well			00)	The training arrays in a		ine Fed Exploration Unit
OilWe		<u> </u>	<u> </u>	Mrl	UEN HAI	8. Well Nam Wolveri	ne and No. ine Federal #17-4
Name of Operator W Address	olverine Gas & Oil	Co of Utah, LLC	3b. Phone N	No (maha	la avag coda)	9. API Wel	
One Riverfront Plaz	<u> </u>		616-458-		e ureu code)	10. Field and Explora	Pool, or Exploratory Area
4. Location of Well (Fo		or Survey Description)					or Parish, State
SHL: 1680' FNL & BHL: 1980' FSL &		235	1 V	U	17	Sevier C	Co, UT
12. C	HECK APPROPRI	ATE BOX(ES) TO		<u>v</u>	RE OF NOTICE,	REPORT, OR	OTHER DATA
TYPE OF SUBMI	SSION	 		TY	PE OF ACTION		
Notice of Intent	1 =	ridize ter Casing	Deepen Fracture 7	reat [Production ((Start/Resume)	Water Shut-Off Well Integrity
Subsequent Repor		sing Repair	New Con		Recomplete		Other suspend operations
Final Abandonme	t Motion	ange Plans envert to Injection	Plug and . Plug Back		Temporarily Water Dispos		
Operations will		additional (total 5) p					location, at which time, red with a cap flange.
PLEASE MAIN	TAIN ALL INFOR	MATION CONTAI	NED HEREI	N CONF	IDENTIAL - than	k you	D -
	1 44 1 14		· managements of the				RECEIVED
	i ing eng Tung an n	THE SERVENCE COPERA	NOR !				APR 2 1 2005
xe: UDOGM	i Luid Roll	5-4-6 CHO	25				DIV. OF OIL, GAS & MINING
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14. I hereby certify th Name (Printed)	at the foregoing is tr	ue and correct		1			
Steven	R Hash - EXACT F	Engineering Inc		Title C	Consulting Enginee	r (918) 599-9400	
Signature 5	Even 12.	Hash		Date		04/18/2005	
	THIS	SPACE FOR I	FEDERAL	ORS	TATE OFFIC	E USE	
Approved by Conditions of approval, certify that the applicant which would entitle the	holds legal or equitab	le title to those rights i		nt or case	Utah Div	na Milliny	Federar Approval Of This Action Is Necessary
Title 18 U.S.C. Section 10 States any false, fictitiou	001 and Title 43 U.S.C. s or fraudulent statem	Section 1212, make it a ents or representations	crime for any as to any matte	person kr	owingly and Villful Gurishiction	ly to make to after	department or agency of the United
(Instructions on pag	e 2)			Ву:	TAKE		
				$ \cap$ \cap	MICIDENIT	141	

CONFIDENTIAL

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415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

Steven R. Hash, P.E. Registered Professional Engineer stevehash@exactengineering.com

CONFIDENTIAL PLEASE!

September 6, 2005

Mr. Dustin Doucet Utah Division of Oil, Gas & Mining 1594 West North Temple, Suite 1210 Salt Lake City, UT 84114-5801

Re:

Wolverine Federal 17-4 well

Sec 17 T23S R01W Sevier Co, UT API# 43-041-30035

BLM Lease No. UTU-73528

Dear Mr. Doucet,

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed our daily completion activity reports for the subject well. Wolverine's Grand Rapids, Michigan office will send final completion form(s). We respectfully request that the enclosed information remain confidential.

Very Truty Yours

Chris Nicely

Engineering Technician

copy without enclosures via email to:

Wolverine Gas & Oil Co of Utah, LLC:

EXACT Engineering, Inc.

Helene Bardolph

well file

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DIV. OF OIL, GAS & MINING

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page 1 of 3

New Completion
7" 23# HCP110 @ 6908' TD
PBTD 6869' on 3/11/05; CBL TD 6590'
Perfs - 6292-6310; 6327-6350; 6360-6362; 6370-6382
6386-6388; 6406-6409; 6411-6413; 6416-6419
ESP set @ na
GL to RKB: 17'

"TIGHT HOLE"

08/26/05

FIRST COMPLETION REPORT — during July cleaned location, installed 11" 5m x 7-1/16" 5m tbg head with (2) 2-1/16" 5m gate valves w/ single valve tree, move in 4% KCL treating fluid and flowback tanks. Offload 2-7/8" 6.5ppf N80 EUE 8rd new tbg. MIRU Pool Well Service Unit @ 6am from WF 17-5. ND wellhead & flowline, NU 7-1/16" 5m BOP, set up pipe racks & load with tbg & strap. Note: CBL log run on 7/21/05 found good cement w/ TOC @ 5670' & marker jt @ 5833-5845. Pickup 6-1/4" bit & csg scraper and TIH w 213 jts of 2-7/8" tbg, tag PBTD @ 6640'. RU Halco & pump 1500 gal caustic-chemical tubular cleanup job, displace hole w 4% Kcl. RD Halco. Swab well down to 2500' fs. SDFN. Tomorrow's plan: perf & test. CMOL: Steve Hash

(incl csg,FL,WH,tbg)

Est Daily Completion Cost Est Cumulative Comp Cost Est Dryhole Cost

Est Dryhole Cost
Est Total Well Cost to date

Completion AFE \$1
Dryhole AFE \$
Total Well Cost AFE \$

\$

08/27/05

POOH w/ tbg & laydown tools, RU WellServ WLU w/ lubricator. Perforated in four gun runs the (8) Upper Navajo 1 intervals listed below with 4 jpf (260 holes total) per Spectral Density – Dual Spaced Neutron log dated 09-Mar-2005. Used 4" HSC gun, Titan 39 gm charges for .47" hole diam, 90 deg phased and 59" penetration, standby

set	zone	interval	ft	density	# holes	Phase	diam	Pene
(1)	Upr Navajo 1	6292-6310	18	4 jpf	72	90	.47	59"
(2)	Upr Navajo 1	6327-6350	23	4 jpf	92	90	.47	59"
(3)	Upr Navajo 1	6360-6362	2	4 jpf	8	90	.47	59"
(4)	Upr Navajo 1	6370-6382	12	4 jpf	48	90	.47	59"
(5)	Upr Navajo 1	6386-6388	2	4 jpf	8	90	.47	59"
(6)	Upr Navajo 1	6406-6409	3	4 jpf	12	90	.47	59"
(7)	Upr Navajo 1	6411-6413	2	4 jpf	8	90	.47	59"
(8)	Upr Navajo 1	6416-6419	3	4 jpf	12	90	.47	59"
	total	127 gross	65		260			

Make up 7" RBP, ball catcher & pkr assy & TIH to 6440, set RBP. Pull EOT to 6266, run in hole w/ CCL, & log in pkr, make -15ft correction. RD WLU. Reset RBP @ 6384 & pkr @ 6304 wlm. RU to swab, BFL 2000', made 7 runs and recv 35 bbls fluid, EFL 5300' pulling from 6000'. Sample 95% oil, recovering grit & fines in swab, leave well open to tank. SDF weekend. Monday's plan: test remaining perfs natural & acidize Tuesday. CMOL: Steve Hash This am FTP zero, flwd 2 BO in 10 hrs overnight

Est Daily Completion Cost \$ St Cumulative Comp Cost



08/28/05

Flwd 18 BO and no water on open chk in 24 hrs, FTP 0 psi

page 2 of 3

New Completion 7" 23# HCP110 @ 6908' TD PBTD 6869' on 3/11/05; CBL TD 6590' Perfs - 6292-6310; 6327-6350; 6360-6362; 6370-6382 6386-6388; 6406-6409; 6411-6413; 6416-6419 ESP set @ na **GL to RKB: 17'**

"TIGHT HOLE"

Flwd 20 BO and no water on open chk in 24 hrs, FTP 0 psi 08/29/05

Kill well by reversing one tbg volume, release tools, reset across perf zone #1 6276-6294 w/ RBP @ 08/30/05 6302 & pkr @ 6247 wlm. RU to swab, made 11 runs and recovered 73 bbls fluid. EFL @ 5300', sample 95% oil. Fill tbg, release tools @ 2pm and reset across perf zones 6-7-8 w/ RBP @ 6448 & pkr @ 6382 wlm. RU swab, made 2 runs and rec 28 bbls fluid. Sandline clutch failed on rig, waiting

on parts and mechanic. Postponed acid work until Thursday 9/1/05. CMOL: SRHash

Est Daily Completion Cost Est Cumulative Comp Cost

08/31/05 Rig repair

Rig repair complete, made 1 swab run, BFL 2600' fs, rec 8 bbl, clutch ok. 09/01/05

09/02/05 Shut down waiting on Halliburton – prep to acidize today 9/2

RU Halco to acidize. HSF. All fluid NeFeHCl w/ inhibitor, morflo III surfactant & penetrating 09/03/05 surfactant. Spot 350 gal to btm perf set 6-7-8. Pressured zone to 3300 psi (~1 psi/ft) for 14 attempts bleeding off to 2500 each time, surged last two attempts, could not breakdown. Reset pkr @ 6304 wlm w/ remaining acid in tbg, pressured perf sets 2-8 to 3000 psi for 11 attempts, surged twice, pressured to 3050 psi and communicated, reset pkr @ 6338 wlm, pressure perf sets 3-8 and communicated to annulus. Reset pkr above perf sets 2-8 and pumped 5800 gal acid w/ 1600 gal ahead then 3000 gal w 282 BS (1.3 sg, 7/8" dia, 150%), then 1200 gal with 50 bbl flush. Acid at 3.3 bpm @ 3400 psi tbg and 2800 psi on csg throughout job, flush @ 4.7 bpm @ 3500 psi. ISDP 2400, 5=825, 10=535, 15=380. Bleed off, move pkr to 6382' & pump into perf set 6-7-8 @ 2 bpm @ 3600 psi w 20 bbl. no break. Move RBP to 6304' and pkr to 6248 across top perf set 1. Pump 2000 gal with 108 BS (1.3 sg, 7/8" dia, 150%) at 2.5 bpm @ 2450 psi, incr rate to 3.5 bpm @ 2750 psi, flush with 48 bbls @ 3100 psi. ISDP 2000, 5=645, 10=360, 15=225 psi. Bleed off, RD Halco, release pkr, catch RBP and pull up to 6216' w/ RBP swinging, reverse 60 bbls to pit, set pkr at 6216'. 248 BLWTR. RU swab. BFL surf, made 5 runs and hung swab cup, worked free in 1-1/2 hrs, resume swabbing. Recovered 128 bbls fluid in 16 runs in 7 hrs total swabbing, EFL @ 2200', pulling from 4000'. Last sample 90% oil, left well open to tank on 24/64" chk @ 11pm. Release rig crew, SDFN, well flowing by 12 midnite, next am, made 34 bbls in 6 hrs flowing by 6am, 5.5 bbl/hr avg rate. CMOL: SRHash Est Daily Completion Cost Est Cumulative Comp Cost \$

09/04/05

Monitor well and police location, release crew for holiday weekend at 10am. Well flowed 47 bbls fluid on open chk in 8hrs until 2pm 9/3, avg 6 bphr, 20% load water, 209 bbls total recovery, approx 140 BLWR, 108 BLWTR. Made 69 BO. Prep to trip tools and run BHP instruments on Tuesday 9/6. Will continue to flow well on test thru weekend.

Est Daily Completion Cost

Est Cumulative Comp Cost

Flowed 196 bbls on open chk in 24 hrs until 2pm 9/4, FTP zero. Approx 166 BO & 30 BLW, 78 BLWTR. Switch well into frac tank A3, Approx 300 BO production to date

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09/05/05

"TIGHT HOLE"

09/06/05

page 3 of 3

New Completion
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6386-6388; 6406-6409; 6411-6413; 6416-6419
ESP set @ na
GL to RKB: 17'

Flowed 186 bbls on open chk in 24 hrs until 2pm 9/5, FTP zero. Approx 10% load water in samples, ph 5.5, 176 BO & 10 BLW, 68 BLWTR, Total production approx 476 BO. Prep to trip tools 9/6,

CMOL: SRHash FIRST OIL SALES FROM WF 17-4 TO CHEVRON on 9/5/05 – run ticket #75238

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Steven R. Hash, P.E. Registered Professional Engineer stevehash@exactengineering.com

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September 19, 2005

Mr. Dustin Doucet Utah Division of Oil, Gas & Mining 1594 West North Temple, Suite 1210 Salt Lake City, UT 84114-5801

Re:

Wolverine Federal 17-4 well

Sec 17 T23S R01W Sevier Co, UT API# 43-041-30035

BLM Lease No. UTU-73528

Dear Mr. Doucet,

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed our final daily completion activity reports for the subject well for September 6 through September 16, 2005. Wolverine's Grand Rapids, Michigan office will send final completion form(s). We respectfully request that the enclosed information remain confidential.

Very Truly Yours,

Chris Nicely

Engineering Technician

copy without enclosures via email to:

Wolverine Gas & Oil Co of Utah, LLC:

EXACT Engineering, Inc.

Helene Bardolph

well file

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due diligence, acquisitions, procedures, temporary personnel and field supervision Petroleum Engineering vell design, construction & management, drilling, completion, production, production, production, production, procedures, design, construction & management, drilling, completion, production, procedures, procedures, temporary personnel and field supervision due diligence, acquisitions, procedures, temporary personnel and field supervision diligence, acquisitions, procedures, temporary personnel and field supervision.

page 4 of 4

New Completion
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PBTD 6869' on 3/11/05; CBL TD 6590'
Perfs – 6292-6310; 6327-6350; 6360-6362; 6370-6382
6386-6388; 6406-6409; 6411-6413; 6416-6419
ESP intake set @ 5189 (4970' tvd)
GL to RKB: 17'

"TIGHT HOLE"

09/15/05 Pmpd 162 bbls fluid to test tank in 6 hrs on a 14/64" chk, 350 psi PTP from 8am to 2pm 9/14/05. Running 51 hz pump speed, est production at 130 BO & 32 BLW

Production Tubina Settina - run in hole on 9/13/05

	Description	SN	Length	Top @ kb
1	4.50"od, 54hp, 1020v,35a,FMH motor	21F-0068747	14.80	5194 md
1	4.0"od, FSB3 SSCV SB seal	31F-0071886	5.58	5189 md
1	4.0"od, type P8, model 400P, 147 stg pump w intake	01F-0007454	13.50	5175 md
1	2-3/8" x 2-7/8" EUE 8rd xover		.75	
1	2-7/8" EUE 8rd SN (2.25" min id)		1.10	5173 md
1	2-7/8" 6.5# N80 EUE 8rd handling sub		6.18	
164	2-7/8" 6.5# N-80 EUE 8rd tbg joints		5149.99	
	Overall		5191.95	1700 010
	Set below KB (GL to KB = 17')		+17.0	
	EOT set @ KB	3	5208.90	
	EOT 5209'kb md; intake @ 5189'kb md (4970' tvd)			
	Note: there is NO check or drain valve in this well			

09/16/05 Pmpd 696 bbls fluid to test tank in 24 hrs on 14/64" chk @ 320 psi PTP from 2pm 9/14 to 2pm 9/15; running 51 hz. Samples trace water, estimate production at 675 BO & 21 BLW; Total production to date 2289 BO, TURNED WELL OVER TO PRODUCTION @ 2pm 9/15/05 – FINAL COMPLETION REPORT – Thank you!

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page 3 of 4

New Completion
7" 23# HCP110 @ 6908' TD
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ESP intake set @ 5189 (4970' tvd)
GL to RKB: 17'

"TIGHT HOLE"

09/06/05 Flowed 186 bbls on open chk in 24 hrs until 2pm 9/5, FTP zero. Approx 10% load water in samples, ph 5.5, 176 BO & 10 BLW, 68 BLWTR, Total production approx 476 BO. Prep to trip tools 9/6, CMOL: SRHash FIRST OIL SALES FROM WF 17-4 TO CHEVRON on 9/5/05 – run ticket #75238

09/07/05 Flowed 121 bbls on open chk in 16 hrs fr 2pm until 6am 9/6; SWI, reverse tbg volume w KCI, released pkr, POOH w 199 jts, LD tools. Pick up 2-7/8" MA on btm of pkr, install pressure recorder, RIH with tbg & set pkr @ 6221' w EOT & recorders at 6234'. ND BOP, NU tree & land tbg. RU to swab, recv 83 bbls fluid, last sample 95% oil, leave well open to tank, flwg by 6pm. Rig down and move rig to WF 17-5. SDFN. Flowed well overnight

09/8/05 Flowed 152 BO and tr water on open chk in 20 hrs on test from 6pm 9/6 until 2pm 9/7, FTP 0

09/9/05 Flowed 172 BO and tr water on open chk in 25 hrs on test from 2pm 9/7 to 2:45 pm 9/8. FTP 0

SWI

for BHPBU @ 2:45pm 9/8/05

09/10/05 Well shut in 23 hrs for BHPBU from 2:45pm 9/8 to 2pm 9/9; SITP 410 psi in 23 hrs

09/11/05 Well shut in 24 hrs for BHPBU from 2pm 9/9 to 2pm 9/10; SITP 420 psi in 47 hrs

09/12/05 Well shut in 25 hrs for BHPBU from 2pm 9/10 to 3pm 9/11; SITP 420 psi in 72 hrs; turn well back on to main battery @ 3pm 9/11

09/13/05 Flowed est 192 BO and tr water on open chk in 23 hrs from 3pm 9/11 to 2pm 9/12. FTP 0

Flowed est 125 BO and tr water on open chk in 18 hrs from 2pm 9/12 to 8am 9/13. FTP 0 RU Pool WSU, top kill well with 15 bbls KCl, ND tree & NU BOPE w/ annular & test. Release 7" Arrowset pkr, reverse tbg clean with 30 bbls KCl. Lay down 35 jts tbg & stand back remaining 164 jts, lay down tools. RU Baker Centrilift to run ESP, pick up motor, seal & pump w/ 2.25 SN & TIH banding #4 cable 3 bands per jt, splice feed thru and land btm of tbg @ 5209' md. ND BOPE & NU wellhead. Complete tbg setting report to follow. Hook up flowlines, air supply & shutdowns. Pump in operation and on test @ 7:00pm 9/13 on a 24/64" chk, PTP 150 psi. This am pmpd 444 bbls fluid in 12 hrs til 8am 9/14, 246 BO & 198 BLW. Sample this am 10% water, reduce to 14/64" chk, PTP 350 psi, pumping ARO 27 bphr. RD WSU.

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EXACT Engineering, Inc. 415 S. Boston, Suite 734, Tulsa, OK 74103 (918) 599-9400



WOLVERINE GAS AND OIL COMPANY

of Utah, LLC

Energy Exploration in Partnership with the Environment

September 22, 2005

CONFIDENTIAL

Ms. Carol Daniels Utah Division of Oil, Gas & Mining 1594 W.N. Temple Suite 1210 Salt Lake City, UT 84114-5801

Re: Wolverine Federal 17-4 Well Completion Report

Dear Carol:

Enclosed please find the Completion Report (form #8) for the captioned well. Attached to the report are the following documents:

- Directional Survey
- Geologic Report
- Logs
 - 1. Mudlog
 - 2. Dipmeter Monitor Log
 - 3. Spectral Density/DSN/GR TVD
 - 4. Spectral Density/DSN/GR MD
 - 5. Dual Laterolog MSFL DFL TVD
 - 6. Dual Laterolog MSFL DFL MD

Please keep this report and all attachments confidential. If you have any questions or concerns, please feel free to contact me.

Sincerely,

Helene Bardolph

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D'Y. OF OIL, GAS & MINING

STATE OF UTAH

			DEPAR DIVISIO	TMEN	TATE (TOF NA FOIL,	TURA	LRESC	URCES MININ	S G	C()NFI[DEN		ENDED Shlight (BASE DE JTU-7	REPORT changes) SIGNATION AN	ID SEF	FORM 8
WELI	L COM	PLE	TION	OR F	RECC	MPL	ETIC	N RI	EPOF	RT ANI	D LOG				ALLOTTEE OF	TRIBE	E NAME
1a. TYPE OF WELL			OIL Z		GAS C]	DRY		OTH			. · ·			AGREEMENT		
b. TYPE OF WORK															rine Fed.		loration Unit
	HORIZ. LATS.] [DEEP-		RE- ENTRY		DIFF. RESVR.		ОТН	ER Wel	l Comple	etion			rine Fede		17-4
2. NAME OF OPERA Wolverine		d Oil C	Compar	ny of l	Jtah, L	LC.								PI NUMBI	ER: 30035		
3. ADDRESS OF OF 55 Campau			CITY Gra	and R	anide	STATE	MI	ZIP 49 5	503		NUMBER:	1150	10 F	IELD AND	POOL, OR WI		Γ
4. LOCATION OF W			J. 1. 010		аріас	O I A I L		211 100				1100					HP. RANGE
AT SURFACE:	1680' F	NL & 2	2249' F	WL, S	Sec 17,	T235	S, R1W	1							R, SECTION, TO N: 17 22		W 26
AT TOP PRODUC	CING INTERV	/AL REPO	ORTED BEL	.ow: 2	:,062' F	FEL &	2264'	FSL,	Sec 17	7, T23S,	, R1W			-1444	11 23	5 1	W 26
AT TOTAL DEPT	H: 1932	'FEL	& 2109	' FSL,	Sec 1	7, T2	3S, R1	IW						COUNTY Sevier		13.	STATE UTAH
14. DATE SPUDDED 1/31/2005): 1	5. DATE 3/8/2	T.D. REACH	HED:	16. DATI	COMPL 2005	ETED:	F	ABANDON	ED	READY TO	PRODUCE	Z		VATIONS (DF, 752,5753,		
18. TOTAL DEPTH:	MD 6.9	806	1	9. PLUG	BACK T.E).: MD	6,869		20. IF I	MULTIPLE C	OMPLETION	S, HOW M	ANY? *	21. DEP	TH BRIDGE	MD	
00 = 100 = 100 = 100	TVD 6.6				<u> </u>		6,573							PL	.UG SET:	TVD	
Dual Laterol Dipmeter Mo	og MD 8	₹. ZVD	Spect	ral De				D&T	VD,	WAS DST	L CORED? RUN? DNAL SURVE	Y?	NO NO NO	<u> </u>	YES (t analysis) t report)
24. CASING AND LI	NER RECOR	D (Repor	t all strings	set in w	ell)					· · · · · · · · · · · · · · · · · · ·					, <u>, , , , , , , , , , , , , , , </u>	-	. сору
HOLE SIZE	SIZE/GR	ADE	WEIGHT	(#/ft.)	TOP (MD)		BOTTOM (MD)			STAGE CEMENTER DEPTH		YPE & ACKS	SLURRY VOLUME (BBL)		CEMENT TO	P **	AMOUNT PULLED
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17.5	133/8	J55	68	3	C)	2,1	127				1,120	2	37	Surface		
12.25	9 5/8	$\supset \Box$	47		C)	5,8	323		7	50/50	470	14	13	4800 C	AL	
8.5	7	\Box	23	3	С)	6,9	08			50/50	295	9	0	5670 C	BL	
		1	PIID	LTC													
			HCP	110						V	BM 1:	te/F	rem	·			
25. TUBING RECOR																	
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2 7/8"		209											***			丄	
26. PRODUCING IN		TOF	P (MD)	BOTTO	M (MD)	TOP	(TVD)	вотто	M (TVD)		RATION REC		0175	NO 1101	=-1 ===		
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28. ACID, FRACTUR	E. TREATM	ENT. CEM	IENT SOUE	FZF FT	•		·		!						Open	s	Squeezed
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6292 - 6310			2000) aal N	Io Eo U	CL w/	inhih				·			. 44			
6327 - 6419			5800) gai i	leFeH	CL W/	inhib.	morfi	OW III	surfacta	nt & per	netrat.	surfa	c. + 10	08 RBS, 4	-8 bt	ols overflush
6406 - 6419					wate		IIIIID.	, IIIOIII	OW III	Surracia	nt & per	ietrat.	surra	C. + 28	32 RBS, 5	iU DI	ols overflush
29. ENCLOSED ATT	ACHMENTS	:	120 01	J. 130L	- water	1				"	-				20.1	WEII	STATUS:
Z ELECT	RICAL/MECH	ANICAL L		CEMENT	VERIFICA	ATION		GEOLOGI CORE AN	C REPOR ALYSIS		DST REPOR	T Z	DIREC	TIONAL S	NIDVEY		oducing

(5/2000) (CONTINUED ON BACK) SEP 2 6 2005

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31. INITIAL PRO	DDUCTION				IN	TERVAL A (As sho	wn in item #26)			111-N1	ΙΔΙ
DATE FIRST PR	ODUCED:	TEST (DATE:		HOURS TESTE	D:	TEST PRODUCTIO	ON OIL - BBL:	GAS - MCF:	WATER - BBL:	PROD. METHOD:
9/5/2005		9/16	3/2005	5		24	RATES: →	696	0	WATER BBL.	Pumping
CHOKE SIZE:	TBG. PRES	SS. CSG. F	RESS.	API GRAVITY	/ BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTIO	ON OIL - BBL:	GAS - MCF:	WATER - BBL:	INTERVAL STATUS
14/64	420		0	40.00	0	0	RATÉS: →	696	0	THE BELL	Producing
					IN	TERVAL B (As sho	wn in item #26)			<u> </u>	
DATE FIRST PR	ODUCED:	TÉST (DATE:		HOURS TESTE	ED:	TEST PRODUCTION RATES: →	ON OIL - BBL:	GAS MCF:	WATER - BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRES	SS. CSG. F	RESS.	API GRAVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER - BBL:	INTERVAL STATUS
					IN ⁻	TERVAL C (As sho	wn in item #26)				<u> </u>
DATE FIRST PRODUCED:		TEST D	TEST DATE:		HOURS TESTED:		TEST PRODUCTIC	ON OIL - BBL:	GAS - MCF:	WATER - BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRES	SS. CSG. P	S. CSG. PRESS. A		BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	ON OIL - BBL:	GAS - MCF:	WATER - BBL:	INTERVAL STATUS:
			-		IN	TERVAL D (As sho	wn in item #26)	L		<u></u>	<u>. </u>
DATE FIRST PRODUCED:		TEST D	TEST DATE:			HOURS TESTED:		OIL - BBL:	GAS - MCF:	WATER - BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRES	S. CSG. PRESS. API GR		API GRAVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION	ON OIL - BBL:	GAS - MCF:	WATER - BBL:	INTERVAL STATUS:
32. DISPOSITION Venting (<u>.</u>	<u>. </u>	<u> </u>	w	 	
33. SUMMARY					 .			34 EORMATION	N (Log) MARKERS:		
	nt zones of p	orosity and cor	itents ther	eof: Cored inte	rvals and all drill-ster nd recoveries.	m tests, including de	epth interval	,	(LOY) MARKERS:		
Formation		Top (MD)		ttom ID)	Descrip	otions, Contents, etc).		Name		Top (Measured Depth)
Arapien Navajo		55 6,191			ater & water			Arapien Twin Cree Navaio	ek		0 5,863 6,191

35. ADDITIONAL REMARKS (Include plugging procedure)

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

NAME (PLEASE PRINT) John Vrona
SIGNATURE

INTLE Manager of Geology

DATE 9/22/2005

This report must be submitted within 30 days of

- completing or plugging a new well
- drilling horizontal laterals from an existing well bore
- recompleting to a different producing formation
- · reentering a previously plugged and abandoned well
- significantly deepening an existing well bore below the previous bottom-hole depth
- drilling hydrocarbon exploratory holes, such as core samples and stratigraphic tests

* ITEM 20: Show the number of completions if production is measured separately from two or more formations.

** ITEM 24: Cement Top – Show how reported top(s) of cement were determined (circulated (CIR), calculated (CAL), cement bond log (CBL), temperature survey (TS)).

Send to:

Utah Division of Oil, Gas and Mining 1594 West North Temple, Suite 1210

Box 145801

Salt Lake City, Utah 84114-5801

Phone: 801-538-5340

Fax: 801-359-3940

CONFIDENTIAL

ADDENDUM #1

Perforation Details

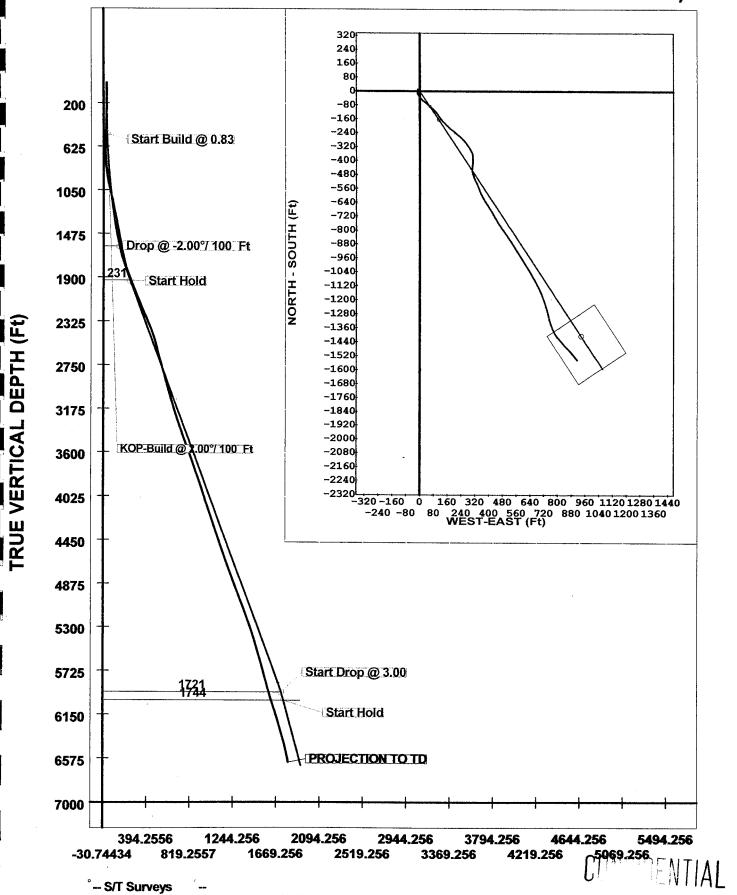
Wolverine Federal 17-4 1680' FNL & 2249' FWL, Sec 17, T23S, R1W Sevier County, Utah API# 43-041-30035

Perforations:

set	zone	interval	ft	density	# holes	Phase	diam	Pene
(1)	Upr Navajo 1	6292-6310	18	4 jpf	72	90	.47	59"
(2)	Upr Navajo 1	6327-6350	23	4 jpf	92	90	.47	59"
(3)	Upr Navajo 1	6360-6362	2	4 jpf	8	90	.47	59"
(4)	Upr Navajo 1	6370-6382	12	4 jpf	48	90	.47	59"
(5)	Upr Navajo 1	6386-6388	2	4 jpf	8	90	.47	59"
(6)	Upr Navajo 1	6406-6409	3	4 jpf	12	90	.47	59"
(7)	Upr Navajo 1	6411-6413	2	4 jpf	8	90	.47	59"
(8)	Upr Navajo 1	6416-6419	3	4 jpf	12	90	.47	59"
	total	127 gross	65		260			

Company: Wolverine Gas & Oil Co of Utah Lease/Well: Federal 17-4 Location: Covenant Field State/Country: Sevier County, Utah





VERTICAL SECTION (Ft) @ 146.00°

₩Weatherford

Job Number: WYL0105D015

Company: Wolverine Gas & Oil Co of Utah

Lease/Well: Federal 17-4

Location: Covenant Field

Rig Name: Unit 111

RKB:

G.L. or M.S.L.:

State/Country: Sevier County, Utah

Declination: 12.95

Grid:

File name: C:\MARSHA~1\ENDOFW~1\WOLVER~1\FEDERA~2\1;

Date/Time: 12-Jul-05 / 11:56 Curve Name: S/T Surveys

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method Vertical Section Plane 146.00 Vertical Section Referenced to Wellhead Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Inci Angle Deg	Drift Direction Deg	Course Length FT	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	Dogleg Severity Deg/100		S U R E Direction Deg
.00	.00	.00		20						
191.00	.60		404.00	.00	.00	.00	.00	.00	.00	.00
345.00	1.90	41.60 320.20	191.00	191.00	.75	.66	25	.31	1.00	41.60
437.00	2.50		154.00	344.96	3.31	43	-2. 9 9	1.24	3.34	352.52
465.00	2.90 2.90	319.00	92.00	436.90	6.00	-2.73	-6.50	.65	6.59	335.55
405.00	2.90	315.10	28.00	464.86	6.96	-3.63	-7.80	1.57	7.85	332.47
495.00	3.10	305.10	30.00	494.82	7.97	-4.83	-9.30	1.86	9.31	328.78
526.00	3.00	312.70	31.00	525.78	9.00	-6.11	-10.88	1.34	10.88	325.82
556.00	2.80	302.50	30.00	555.74	9.92	-7.30	-12.31	1.84	12.32	323.64
587.00	2.70	285.10	31.00	586.71	10.52	-8.65	-13.56	2.70	13.62	320.58
617.00	2.30	255.00	30.00	616.68	10.55	-9.91	-14.29	4.51	14.47	316.78
						0.0.	11.20	4.01	17.71	310.70
647.00	2.50	226.90	30.00	646.65	9.95	-10.97	-14.38	3.94	14.81	312.19
677.00	3.20	205.80	30.00	676.62	8.74	-11.81	-13.86	4.17	14.70	306.51
708.00	4.10	198.40	31.00	707.55	6.91	-12.54	-12.74	3.27	14.32	298.87
738.00	5.10	192.90	30.00	737.46	4.60	-13.18	-11.18	3.64	13.95	289.23
768.00	5.60	195.10	30.00	767.33	1.88	-13.85	-9.31	1.80	13.98	277.74
797.00	6.50	186.60	29.00	796.17	-1.11	4444	7.44	4.07		
827.00	7.00	178.80	30.00	825.96	-1.11 -4.63	-14.41	-7.14	4.37	14.46	265.58
857.00	7.70	170.80	30.00	855.71	-4.63 -8.44	-14.57	-4.31	3.48	15.29	252.38
886.00	8.00	162.50	29.00	884.44	-0.44 -12.28	-14.21	95	4.13	16.53	239.29
916.00	9.00	156.40	30.00	914.11	-12.28 -16.42	-13.29	2.75	4.04	18.10	227.26
0.10.00	0.00	100.40	30.00	314.11	-10.42	-11.72	7.06	4.48	20.18	215.52
947.00	10.20	150.90	31.00	944.68	-21.04	-9.42	12.18	4.87	23.06	204.11
976.00	11.40	145.80	29.00	973.16	-25.66	-6.56	17.60	5.29	26.48	194.34
1005.00	12.20	143.70	29.00	1001.55	-30.50	-3.13	23.53	3.13	30.66	185.87
1035.00	12.80	140.70	30.00	1030.84	-35.62	.85	30.01	2.95	35.63	178.64
1067.00	13.00	137.40	32.00	1062.03	-41.02	5.53	37.10	2.39	41.39	172.32

€ '#'										
Measured	Incl	Drift	Course	True			Vertical	Dogleg	CLOS	URE
Depth	Angle	Direction	Length	Vertical	N-S	E-W	Section	Severity	Distance	Direction
FT	Deg	Deg	FT	Depth	FT	FT	FT	Deg/100	FT	Deg
1098.00	12.90	134.90	31.00	1092.25	-46.03	10.34	43.94	1.84	47.17	167.34
1130.00	12.80	133.40	32.00	1123.44	-50.98	15.45	50.90	1.09	53.27	163.15
1161.00	12.60	132.10	31.00	1153.69	-55.61	20.45	57.54	1.13	59.25	159.81
1193.00	12.40	130.70	32.00	1184.93	-60.19	25.64	64.24	1.13	65.43	156.92
1224.00	12.10	128.60	31.00	1215.22	-64.39	30.71	70.55	1.73	71.34	154.50
1256.00	12.10	128.30	32.00	1246.51	-68.56	35.96	76.95	.20	77.42	152.32
1287.00	11.80	128.30	31.00	1276.84	-72.54	41.00	83.06	.97	83.32	150.53
1319.00	12.10	127.70	32.00	1308.15	-76.62	46.22	89 .36	1.01	89.48	148.90
1350.00	12.10	129.10	31.00	1338.46	-80.65	51.31	95.56	.95	95.59	147.54
1386.00	11.90	129.50	36.00	1373.67	-85.39	57.10	102.73	.60	102.73	146.23
4447.00	44.00	400.00	04.00	4404.04	00.40	04.00	400 70	0.00	400.70	445.04
1417.00	11.30	130.60	31.00	1404.04	-89.40	61.88	108.72	2.06	108.73	145.31
1449.00	11.30	130.70	32.00	1435.42	-93.49	66.63	114.76	.06	114.80	144.52
1479.00	11.00	131.60	30.00	1464.85	-97.30	71.00	120.37	1.16	120. 4 5	143.88
1512.00	10.90	134.20	33.00	1497.25	-101.57	75.59	126.48	1.53	126.61	143.34
1543.00	10.70	136.00	31.00	1527.70	-105.68	79.69	132.18	1.26	132.36	142.98
4575.00	40.00	400.70	00.00	4550.45	400.00	00.70	400.04		400.04	4 40 70
1575.00	10.60	136.70	32.00	1559.15	-109.96	83.78	138.01	.51	138.24	142.70
1606.00	10.70	137.40	31.00	1589.62	-114.15	87.68	143.67	.53	143.94	142.47
1638.00	11.20	138.80	32.00	1621.03	-118.68	91.74	149.69	1.77	150.00	142.30
1669.00	11.30	141.30	31.00	1651.44	-123.32	95.62	155.70	1.61	156.04	142.21
1701.00	11.80	144.10	32.00	1682.79	-128.41	99.50	162.10	2.35	162.45	142.23
1732.00	12.90	144.30	31.00	1713.07	-133.79	103.38	168.72	3.55	169.08	142.31
1764.00	14.50	145.30	32.00				176.30			142.31
				1744.16	-139.99	107.74		5.05	176.65	
1795.00	15.90	144.80	31.00	1774.07	-146.65	112.40	184.43	4.54	184.77	142.53
1827.00	17.90	143.00	32.00	1804.69	-154.16	117.88	193.72	6.46	194.06	142.59
1860.00	19.80	141.80	33.00	1835.92	-162.60	124.39	204.36	5.88	204.73	142.58
1891.00	21.30	140.00	31.00	_ 1864.95	-171.04	131.26	215.20	5.25	215.60	142.50
1923.00	21.60	137.90	32.00	1894.73	-179.86	138.95	226.81	2.58	227.28	142.31
1954.00	21.30	135.10	31.00	1923.58	-188.08	146.75	237.99	3.44	238.56	142.04
					-106.06 - 196.29					141.70
1986.00	21.40	134.40	32.00	1953.39		155.02	249.41	.86	250.12	
2017.00	22.00	133.00	31.00	1982.19	-204.20	163.31	260.61	2.56	261.47	141.35
2048.00	22.70	132.10	31.00	2010.86	-212.17	171.99	272.08	2.51	273.13	140.97
2067.00	23.00	130.70	19.00	2028.37	-217.05	177.53	279.22	3.27	280.40	140.72
2176.00	23.40	128.60	109.00	2128.56	-244.44	210.59	320.41	.84	322.64	139.26
2208.00	23.40	128.80	32.00	2157.93	-252.39	220.50	332.54	.25	335.14	138.86
2239.00	23.70	130.00	31.00	2186.35	-252.3 5 -260.25	230.07	344.41	1.82	347.37	138.52
££35.00	23.10	150.00	51.00	2 100.00	-200.20	200.01	UTT.T	1.02	07 7.07	100.02
2271.00	24.00	132.70	32.00	2215.61	-268.80	239.78	356.93	3.54	360.21	138.27
2302.00	24.20	135.50	31.00	2243.91	-277.61	248.87	369.31	3.74	372.83	138.12
2334.00	24.50	138.60	32.00	2273.07	-287.26	257.86	382.34	4.10	386.02	138.09
2366.00	24.50	141.60	32.00	2302.19	-297.44	266.37	395.54	3.89	399.27	138.15
2394.00	23.80	143.20	28.00	2327.74	-306.51	273.36	406.97	3.42	410.70	138.27
2007.00	20.00	170.20	20.00	and the second		2,70,00	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
2431.00	23.30	143.40	37.00	2361.65	-318.36	282.19	421.74	1.37	425.43	138.4 5
2462.00	22.00	145.10	31.00	2390.26	-328.05	289.17	433.67	4.69	437.30	138.60
2493.00	20.40	149.50	31.00	2419.17	-337.47	295.23	444.87	7.28	448.38	138.82
2525.00	19.10	155.50	32.00	2449.29	-347.04	300.24	455.60	7.52	458.89	139.14
2556.00	17.90	163.20	31.00	2478.69	-356.22	303.72	465.15	8.77	468.12	139.55
2000.00										

Page 2
S/T Surveys File: C:\MARSHA~1\ENDOFW~1\WOLVER~1\FEDERA~2\17-4.SVY

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Measured	Incl	Drift	Course	True			Vortical	Dooloo	0100	
Depth	Angle	Direction	Length	Vertical	AL C	E 147	Vertical	Dogleg	CLOS	
FT	Deg	Direction	FT		N-S	E-W	Section	Severity	Distance	Direction
	Deg	Deg	FI	Depth	FT	FT	FT	Deg/100	<u>FT</u>	Deg
2588.00	17.80	170.10	32.00	2509.15	-365.74	305.98	474.32	6.61	476.86	140.08
2619.00	17.50	174.10	31.00	2538.69	-375.05	307.27	482.75	4.03	484.85	140.67
2651.00	17.50	177.50	32.00	2569.21	-384.64	307.98	491.10	3.19	492.75	141.32
2682.00	17.10	182.60	31.00	2598.81	-393.85	307.98	498.73	5.06	499.97	141.98
2714.00	17.70	182.40	32.00	2629.35	-403.41	307.56	506.43	1.88	499.97 507.28	
			V4	2020.00	700.71	307.30	300.43	1.00	307.26	142.68
										_
2745.00	18.50	184.90	31.00	2658.81	-413.02	306.94	514.05	3.60	514.59	143.38
2777.00	19.40	187.30	32.00	2689.08	-423.35	305.83	521.99	3.72	522.26	144.16
2809.00	20.60	186.40	32.00	2719.15	-434.22	304.53	530.27	3.87	530.36	144.96
2840.00	21.00	182.10	31.00	2748.13	-44 5.19	303.72	538.91	5.09	538.92	145.70
2872.00	19.50	177.30	32.00	2778.15	-456.25	303.76	548.11	6.99	548.12	146.35
							0.10	0.00	J-10.12	170.55
2903.00	47.40	400.00	04.00	0007.50						
	17.10	169.60	31.00	2807.59	-4 65.91	304.83	556.71	10.97	556.77	146.80
2934.00	16.00	163.80	31.00	2837.31	-474.49	306.84	564.96	6.40	565.06	14 7.11
2966.00	16.00	159.90	32.00	2868.07	-482.87	309.59	573. 44	3.36	573.59	147.33
2997.00	16.10	158.10	31.00	2897.86	-490.87	312.66	581.79	1.64	581.99	147.51
3029.00	16.00	157.40	32.00	2928.61	-499.06	316.01	590.45	.68	590.70	147.66
3060.00	15.70	155.86	31.00	2958.43	E00 00	040.07	500 TT			
3091.00	16.10	153.60	31.00		-506.83	319.37	598.77	1.67	599.06	147.78
3123.00	16.50	153.40		2988.25	-514.51	322.99	607.16	2.38	607.49	147.88
3165.00	16.80		32.00	3018.96	-522.55	327.00	616.07	1.26	616.43	147.96
3186.00		154.80	42.00	3059.20	-533.37	332.25	627.98	1.19	628.39	148.08
3 100.00	16.80	157.10	21.00	3079.30	-538.91	334.73	633.96	3.17	634.41	148.15
3218.00	17.10	158.30	32.00	3109.91	-547.55	338.27	643.09	1.44	643.61	440.00
3249.00	17.40	158.30	31.00	3139.52	-556.09	341.67	652.07	.97		148.29
3281.00	17.90	159.20	32.00	3170.01	-565.13	345.18	661.54		652.66	148.43
3312.00	18.10	158.30	31.00	3199.50	-574.06	348.65		1.78	662.21	148.58
3344.00	18.10	156.60	32.00	3229.91	-574.00 -583.24		670.88	1.11	671.64	148.73
	10.10	100.00	JZ.00	J223.31	-303.24	352.47	680.62	1.65	681.47	148.85
3375.00	18.10	154.10	31.00	3259.38	-591.99	356.48	690.12	2.51	691.04	148.94
3407.00	18.20	151.80	32.00	3289.79	-600.87	361.01	700.02	2.26	700.98	149.00
3439.00	18.60	150.40	32.00	3320.15	-609.71	365.90	710.08	1.86	711.07	149.03
3470.00	19.50	148.60	31.00	3349.45	-618.42	371.03	720.17	3.47	721.19	149.04
3501.00	19.80	149.50	31.00	3378.65	-627.36	376.39	730.58	1.37	731.61	149.04
					0.2.1.00	0.0.00	100.00	1.07	731.01	143.04
2522.00	20.00	440.70	00.00	0.400 = 4			_			
3533.00	20.00	149.70	32.00	3408.74	-636.76	381.91	741.45	.66	742.50	149.05
3564.00	19.50	147.80	31.00	3437.91	-645.71	387.34	751.92	2.62	752.98	149.04
3596.00	20.30	145.70	32.00	3468.00	-654.82	393.31	762.81	3.35	763.86	149.01
3627.00	20.30	146.40	31.00	3497.08	-663.74	399.32	773.56	.78	774.60	148.97
3659.00	20.00	146.50	32.00	3527.12	-672.93	405.41	784.58	.94	785.61	148.93
3690.00	19.80	147.90	31.00	3556.27	694 70	444 40	70E 40	4.07	700.40	
3722. 00	20.00				-681.79	411.13	795.13	1.67	796.16	148.91
3749.00	19.80	148.50	32.00	3586.36	-691.05	416.87	806.02	.89	807.05	148.90
3780.00 3780.00		150.80	27.00	3611.75	-698.98	421.51	815.19	2.99	816.24	148.91
	19.60	152.20	31.00	3640.93	-708.16	426.50	825.59	1.65	826.68	148.94
3812.00	19.70	152.30	32.00	3671.07	-717.69	431.51	836.28	.33	837.42	148.98
3843.00	19.50	149.40	31.00	3700.27	-726 77	436.57	846.64	3.20	QA7 04	140.01
3874.00	19.40	148.60	31.00	3729.50	-725.77 -735.61	430.37 441.89	856.95	. 92	847.81	149.01
3906.00	19.50	147.40	32.00	3759.68	-733.61 -744.65	447.53			858.13	149.01
3937.00	19.40	146.90	31.00	3788.91	-744.05 -753.32		867.60	1.29	868.79	148.99
3969.00	19.50	146.50	32.00	3819.08		453.13	877.92	.63	879.10	148.97
0000.00	10.00	170.00	UZ.UU	JU 13.00	-762.23	458.98	888.57	.52	889.75	148.95
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Page 3 UIV S/T Surveys File: C:\MARSHA~1\ENDOFW~1\WOLVER~1\FEDERA~2\17-4.SVY

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Measured	Incl	Drift	Course	True			Vertical	Dogleg	CLOS	HRE
Depth	Angle	Direction	Length	Vertical	N-S	E-W	Section	Severity	Distance	Direction
FT	Deg	Direction	FT	Depth	FT	FT	FT			
	Deg	Deg	Г	Deptil	<u> </u>	FI	<u> </u>	Deg/100	FT	Deg
4000.00	19.80	145.30	31.00	3848.28	-770.86	464.83	899.00	1.62	900.16	148.91
4032.00	18.80	145.50	32.00	3878.48	-779.56	470.83	909.57	3.13	910.72	148.87
4063.00	18.90	144.40	31.00	3907.82	-787.76	476.58	919.59	1.19	920.71	148.83
4095.00	19.00	145.00	32.00	3938.08	-796.24	482.59	929.98	.68	931.07	
4126.00	18.70	144.60	31.00	3967.42						148.78
4 120.00	10.70	144.00	31.00	3907.42	-804.43	488.36	939.99	1.05	941.07	148.74
4167.00	17.90	143.70	41.00	4006.35	-814.86	495.90	952.86	2.07	953.90	148.68
4199.00	17.60	145.30	32.00	4036.82	-822.81	501.57	962.61	1.79	963.63	148.63
4230.00	18.00	146.00	31.00	4066.34	-830.63	506.91	972.08	1.46	973.09	148.61
4262.00	18.50	146.20	32.00	4096.73	-838.95	512.50	982.11	1.57	983.10	
4293.00	18.50	146.00	31.00	4126.13						148.58
7233.00	10.50	140.00	31.00	4120.13	-847.11	517.99	991.94	.20	992.93	148.56
					•					
4356.00	19.10	146.90	63.00	4185.77	-864.03	529.21	1012.24	1.06	1013.22	148.51
4388.00	19.20	147.60	32.00	4215.99	-872.86	534.88	1022.74	.78	1023.71	148.50
4451.00	19.30	148.10	63.00	4275.47	-890.45	545.94	1043.50	.31	1044.48	
4514.00	19.30	147.10	63.00	4334.93	-908.03		1043.30			148.49
4577.00	19.40					557.09		.52	1065.30	148.47
4577.00	19.40	146.40	63.00	4394 .37	<i>-</i> 925.48	568.54	1085.18	.40	1086.17	148.44
			•							
4640.00	18.80	147.60	63.00	4453.91	-942.77	579.77	1105.79	1.14	1106.77	148.41
4734.00	18.90	147.60	94.00	4542.86	-968.41	596.04	1136.15	.11	1137.14	148.39
4829.00	19.60	147.60	95.00	4632.55	-994.86	612.82	1167.46			
4924.00	20.30	150.10	95.00	4721.85				.74	1168.46	148.37
					-1022.60	629.58	1199.83	1.16	1200.86	148.38
5018.00	20.10	149.50	94.00	4810.07	-1050.65	645.90	1232.21	.31	1233.31	148.42
5112.00	20.50	149.20	94.00	4898.23	-1078.71	662.53	1264.77	.44	1265.92	148.44
5207.00	20.90	151.10	95.00	4987.10	-1107.83	679.24	1298.26	.82	1299.48	148.49
5301.00	20.50	154.30	94.00	5075.03	-1137.34	694.48	1331.25	1.28	1332.61	
5396.00	20.70	157.30	95.00	5163.96						148.59
					-1167.82	708.17	1364.17	1.13	1365.76	148.77
5490.00	19.70	160.30	94.00	5252.18	-1198.06	719.92	1395.82	1.53	1397.73	149.00
5585.00	19.80	162.40	95.00	5341.59	-1228.48	730.19	1426.77	.75	1429.10	149.27
5679.00	17.90	163.90	94.00	5430.55	-1257.53	739.01	1455.79	2.09	1458.60	149.56
5774.00	17.00	166.40	95.00		-1285.06	746.32	1482.70	1.23	1486.06	149.85
5804.00	16.80	167.30	30.00	5549.88		748.31				
5885.00	16.90						1490.85	1.10	1494.40	149.95
3003.00	10.50	163.60	81.00	5627.41	-1316.27	754.20	1512.98	1.33	1517.03	150.19
5979.00	16.10	160.60	94.00	5717.54	-1341.67	762.39	1538.62	1.24	1543.15	150.39
6073.00	15.30	158.70	94.00	5808.03	-1365.52	771.23	1563.33	1.01	1568.26	150.54
6168.00	16.50	148.60	95.00	5899.41	-1388.72	782.81	1589.04			150.54
6262.00	17.90			5989.22				3.17	1594.15	
		139.90	94.00			799.07	1616.75	3.11	1621.70	150.48
6357.00	17.50	138.50	95.00	6079.72	-1433.03	817.94	1645.42	.61	1650.03	150.28
6451.00	17.40	137.60	94.00	6169.40	-1453.99	836.79	1673.34	.31	1677.59	150.08
6546.00	17.00	134.20	95.00	6260.15	-1474.17	856.32	1700.99	1.14	1704.83	149.85
6640.00	16.40	136.40	94.00	6350.19	-1474.17	875.32	1700.99			
6735.00	13.80							.93	1730.98	149.62
		143.70	95.00	6441.91	-1512.20	891.28	1752.07	3.39	1755.32	149.49
6830.00	12.20	142.30	95.00	6534.47	-1529.28	904.13	1773.41	1.72	1776.56	149.41
6861.00	11.80	141.80	31.00	6564.79	-1534.36	908.09	1779.84	1.33	1782.95	149.38
			J 1.00	0007.10	1007.00	VUU.UJ	1110.04	1.00	1102.30	175.50
PROJEC"	HON TO	1D								
6908.00	11.80	141.80	47.00	6610.80	-1541.92	914.04	1789.43	.00	1792.48	149.34

WOLVERINE GAS & OIL CORPORATION
WOLVERINE FEDERAL #17-4
NW/SE SECTION 17,T23S,R1W
SEVIER COUNTY, UTAH

GEOLOGIC REPORT

ON

WOLVERINE FEDERAL #17-4 NW/SE SEC. 17,T23S,R1W SEVIER COUNTY, UTAH

FOR

WOLVERINE GAS AND OIL CORPORATION ONE RIVERFRONT PLAZA 55 CAMPPAU NW GRAND RAPIDS, MI 49503-2616

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March 2005	Roger Charbons Decollement Cons	•

WELL DATA SUMMARY

WELL NAME

WOLVERINE FEDERAL #17-4

OPERATOR

WOLVERINE GAS & OIL CORP.

SURFACE LOCATION

NW/SE SEC. 17,T23S,R1W

SEVIER, CO., UT

API#

043-041-30035

WELL CLASSIFACTION

DEVELOPMENT-COVENANT

FIELD

DRILLING CONTRACTOR

UNIT #111

WELL LIESENCE #

043-041-30035

ELEVATION-GROUND LEVEL

KELLY BUSHING

SPUD DATE

1-31-05

5740'

5753'

SURFACE CASING

2127' OF 13 3/8"

INTERMEDIATE CASING

5823' OF 9 5/8"

PRODUCTION CASING

6908' OF 7"

HOLE SIZE

16", 12 ¼",8 ½"

SAMPLE INTERVAL

2130-6908

GAS DETECTION

2170-6908

OPEN HOLE LOGS

GR,SP,CAL,HRI,DSN/SDL,DLL

WELL DATA SUMMARY CONTINUED

MUD TYPE

SALT GEL, FLOWZAN

WELL STATUS

AWAITING COMPLETION

FORMATION TOPS

KELLY BUSHING

5753'

Formation Prog. TVD Sample MD TVD Log MD TVD Subsea

Arapien Surface

Twin Creek 5640 5797 5543 5794 5540 +213

Navajo 6008 6194 5926 6191 5923 -170

FORMATION EVALUATION

WOLVERINE GAS & OIL CORP. WOLVERINE FEDERAL #17-5 NW/SE SEC.17,T23S,R1W SEVIER, CO., UT

The Wolverine Federal #17-4 was the forth well drilled in the Covenant Field. Decollement Consulting began sample coverage at 2130' on Unit Rig # 111, March 24, 2005. Crews collected 30' samples to Total Depth (6908'). Surface casing (13 3/8") was set to 2127' and 12 ¼" drilled to 5823'. Intermediate casing (9 5/8") was set at 5823' and 8 ½" hole drilled to total depth. Production casing (7") was set at 6908'. A full suite of E-Logs was run. Gas detection was run from 2170-6908'

NAVAJO SANDSTONE 5923Log TVD -170 SS

The Navajo Sandstone was white, clear, quartzose, fine (lower) to medium (lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 50-98% unconsolidated, light brown oil stain, rainbows on wash fluid, yellow to white oil fluorescence, blue to white milky cut fluorescence, yellow-gold residual ring cut, strong hydrocarbon odor, 10-16% intergranular porosity, abundant white chalky bit flour.

CONCLUSION: Oil Saturated Reservoir-Awaiting Completion

BIT RECORD

WELL NAME			WOLVERINE FEDERAL #17-5				
LOCATION			NW/SE	SEC. 17,T23S	,R1W		
SURFACE CA	SING		2127' O	F 13 3/8"			
SPUD DATE			1-31-05				
TD DATE			3-9-05				
BIT SIZE MAKE TYPE SERIAL# JETS OUT@ FOOTAGE HOURS ACC.HRS	1 17 1/2 DPI PDC 54869 5X15 497 393 13 13	2 17 ½ SEC. MC55H26 MJ3820 4-24 976 479 35 48 20	3 17 ½ STC XRC MR463 3X22 1734 731 86 ½ 134 ½ 25	4 17 ½ STC XRVC WMR8127 3X22 2127 394 60 194 ½ 30	5 12 1/4 DPI MP4B2MF 2016038 3X22 2425 293 36 230 1/2 25		
RPM PP MUD WT VIS DEV	35 1700 9.9 38 2.5	0/20 1580 9.8 36 9.0	0/25 1480 9.7 38 19	0/30 1300 9.5 37 23	0/33 1350 8.7 32 24 1/2		

BIT RECORD CONTINUED

BIT	6	7	8	9
SIZE	12 1/4	12 1/4	12 1/4	12 1/4
MAKE	SEC	SEC	SEC	SEC
TYPE	EBSXS12S	EXSXS12S	EBXS16S	EBXS165S
SERIAL#	10686670	10686671	10687152	10627406
JETS	3X22	3X22	3X22	3X20
OUT@	3360	4200	5549	5851
FOOTAGE	1612	1286	1349	302
HOURS	82	77 1/2	84 1/2	15 1/2
ACC.HRS	312 1/2	390	474 1/2	490
WT	45	30	40	40
RPM	0/30	0/25	0/30	0/30
PP	1800	1700	1900	1800
MUD WT	9.2	9.7	9.8	· 10.1
VIS	33	30	35	35
DEV	46.8	18.9	19.7	17

BIT	10
SIZE	8 1/2
MAKE	SEC
TYPE	EBXS20S
SERIAL#	10625203
JETS	3X12
OUT@	6903
FOOTAGE	1057
HRS	47
ACC.HRS	537
WT	40
RPM	0/30
PP	1040
MUD WT	8.9
VIS	33
DEV	16.6

DAILY DRILLING SUMMARY

Date	Depth	Prog.	Hrs	Mud	Vis	WL	PH	Activity
1-31-05		283	6 1/2	9.9+	34	nc	10.5	Spud,Drill Surface
2-1-05	677	394	17	10.0	34	nc	9.0	Drill,Trip,MWD
2-2-05	960	283	23	9.9+	34	nc	8.5	Drill
2-3-05	1049	89	12 ½	9.8	33	nc	8.0	Drill,Trip Bit
2-4-05	1296	247	23 ½	9.7	36	nc	7.5	Drill
2-5-05	1435	138	17	9.8+	35	nc	8.1	Drill,Trip Jars
2-6-05	1582	147	23 ½	9.8	39	nc	9.0	Drill
2-7-05	1734	152	18	9.7+	36	nc	10.0	Drill,Trip MWD
2-8-05	1816	82	11 ½	9.5	37	nc	7.5	RIH,Drill
2-9-05	1979	163	23 ½	9.6	34	nc	10.3	Drill
2-10-05		136	22	9.8	36	nc	8.8	Drill
2-11-05	2127	12	3	9.8	37	nc	8.0	Drill,POOH,Casing
2-12-05		Nil	Nil	9.3	30	nc	14	Run 13 3/8, Cement
2-13-05	2127	Nil	Nil	8.7	28	nc	14	Nipple Up
2-14-05	2296	169	12	8.5+	33	nc	14	Press.Test,Drill
2-15-05		129	8 ½	8.9	34	nc	9.0	Drill, Trip-Motor
2-16-05		301	15 ½	8.6+	35	nc	8.5	RIH,Drill
2-17-05	3020	294	17	8.9+	31	nc	7.0	Drill, Trip-Motor
2-18-05	3360	340	14	9.5+	32	nc	7.5	Drill, Plug Back
2-19-05	3360	Nil	Nil	9.5+	32	nc	7.5	WOC
2-20-05	2514	24	1 ½	9.4+	32	nc	14	Time Drill,Drill
2-21-05	2914	400	23 ½	9.5	30	nc	11	Drill
2-22-05		216	11 ½	9.5	30	nc	10.5	Drill,Trip-Bit
2-23-05		470	22 ½	9.6+	32	nc	8.8	Drill
2-24-05		209	11	9.5	35	nc	8.5	Drill,Trip-Motor
2-25-05		136	9 ½	9.8	29	nc	7.5	RIH,Drill
2-26-05	4200	255	21 ½	9.9	30	nc	9.0	Drill,Trip
2-27-05		310	13 ½	9.8	29	nc	7.5	RIH,Drill
2-28-05	5005	495	23 ½	10.0	29	nc	8.8	Drill
3-1-05	5328	323	23 ½	10.1	29	nc	9.0	Drill
3-2-05	5537	209	22	10.0	32	nc	8.0	Drill
3-3-05	5795	258	13 ½	10.0	32	nc	7.5	Drill,Trip-Bit
3-4-05	5851	56	4	10.3	31	nc	7.0	Drill,Run 9 5/8
3-5-05	5851	Nil	Nil	8.4	26	nc	7.0	WOC,RIH

DAILY DRILLING SUMMARY CONTINUED

3-6-05	6080	229	11	8.4	34	nc	11.0	Drill Shoe, Drill
3-7-05	6350	270	24	8.5+	32	nc		Drill
3-8-05							7.0	Drill, Wiper Trip
3-9-05							7.0	POOH,Log
3-10-05	6908	Nil	Nil	8.9	36	nc		Logging

DEVIATION SURVEYS

MEASURED DEPTH	ANGLE	AZMUTH
2067	23.0	130.7
2176	23.4	128.6
2271	24.0	132.7
2366	24.5	141.6
2394	23.8	143.2
2431	23.3	143.4
2462	22.0	145.1
2493	20.4	149.5
2525	19.1	155.5
2556	17.9	163.2
2588	17.8	170.1
2619	17.5	174.1
2651	17.5	177.5
2682	17.1	182.6
2714	17.7	182.4
2745	18.5	184.9
2777	19.4	187.3
2809	20.6	186.4
2840	21.0	182.1
2872	19.5	177.3
2903	17.1	169.6
2934	16.0	163.80
2997	16.1	158.1
3029	16.0	157.4
3060	15.7	155.9
3091	16.1	153.6
3123	16.5	153.4
3165	16.8	154.8
3186	16.8	157.1
3218	17.1	158.3
3249	17.4	158.3
3281	17.9	159.2
3312	18.1	158.3
3344	18.1	156.6

DEVIATION SURVEY CONTINUED

MEASURED DEPTH	ANGLE	AZMUTH
3375	18.1	154.1
3407	18.2	151.8
3439	18.6	150.4
3470	19.5	148.6
3501	19.8	149.5
3533	20.0	149.7
3564	19.5	147.8
3596	20.3	145.7
3627	20.3	146.6
3659	20.0	146.5
3690	19.8	147.9
3722	20.0	148.5
3749	19.8	150.8
3780	19.6	152.2
3812	19.7	152.3
3843	19.5	149.4
3874	19.4	148.6
3906	19.5	147.4
3937	19.4	146.9
3969	19.5	146.5
4000	19.8	145.3
4032	18.8	145.5
4063	18.9	144.4
4095	19.0	145.0
4126	18.7	144.6
4167	17.9	143.7
4199	17.6	145.3
4230	18.0	146.0
4262	18.5	146.2
4293	18.5	146.0
4365	19.1	146.9
4388	19.2	147.6
4451	19.3	148.1
4514	19.3	147.1

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DEVIATION SURVEY CONTINUED

MEASURED DEPTH	ANGLE	AZMUTH
4577	19.4	146.4
4640	18.8	147.6
4743	18.9	147.6
4829	19.6	147.6
4924	20.3	150.1
5018	20.1	149.5
5112	20.5	149.2
5207	20.9	151.1
5301	20.5	154.3
5396	20.7	157.3
5490	19.7	160.3
5585	19.8	162.4
5679	17.9	163.9
5774	17.0	166.4
5804	16.8	167.3
5885	16.9	163.6
5979	16.1	160.0
6073	15.3	158.7
6168	16.5	148.6
6262	17.9	139.9
6357	17.5	138.5
6451	17.4	137.6
6546	17.0	134.2
6640	16.4	136.4
6735	13.8	143.7

LITHOLOGIC DESCRIPTIONS

2130-60	LIMESTONE-100% Light gray, white, chalky, soft to firm, argillaceous, earthy, mudstone.
2160-90	LIMESTONE-80% Light gray, white, chalky, soft to firm, argillaceous, earthy, mudstone. SILTSTONE-20% white, light gray, argillaceous, limy, grades to silty, limestone.
2190-2220	LIMESTONE-90% Light gray, white, chalky, soft to firm, argillaceous, earthy, mudstone. SILTSTONE-10% white, light gray, argillaceous, limy, grades to silty, limestone.
2220-50	LIMESTONE-100% Light to medium gray brown, white, chalky, soft to firm, argillaceous, earthy, mudstone.
2250-80	LIMESTONE-70% Light gray, white, chalky, soft to firm, argillaceous, earthy, mudstone. SILTSTONE-30% white, light gray, argillaceous, limy, grades to silty, limestone.
2280-2310	LIMESTONE-100% Light to medium gray brown, white, chalky, soft to firm, argillaceous, earthy, mudstone.
2310-40	LIMESTONE-100% Light to medium gray brown, white, chalky, soft to firm, argillaceous, earthy, mudstone.
2340-70	LIMESTONE-30% Light gray, white, chalky, soft to firm, argillaceous, earthy, mudstone. SILTSTONE-70% white, light gray, argillaceous, limy, grades to silty, limestone.

SANDSTONE-light red, clear, quartzose, fine(lower) to medium(lower)grained, sub angular, fair to poor sorted, unconsolidated.

LIMESTONE-As Above.

2400-30

SHALE-50% Red brown, blocky, calcareous, silty, firm to hard.

SILTSTONE-10% Light brown, white, arenaceous,

argillaceous, slightly calcareous.

SANDSTONE-40% Light red, clear, quartzose, fine to medium

grained, sub angular, fair to poor sorted, unconsolidated.

2430-60

SHALE-10% Red brown, blocky, calcareous, silty, firm to

hard.

SANDSTONE-90% Light red, clear, quartzose, fine to medium

grained, sub angular, fair to poor sorted, unconsolidated.

2460-90

SHALE-30% Red brown, blocky, calcareous, silty, firm to hard. SANDSTONE-60% Light red, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, unconsolidated. SILTSTONE-10% Light brown, white, arenaceous, argillaceous, slightly calcareous.

2490-2520

SHALE-60% Red brown, blocky, calcareous, silty, firm to hard.

SANDSTONE-10% Light red, clear, quartzose, fine to medium

grained, sub angular, fair to poor sorted, unconsolidated. ANHYDRITE-30% White, light gray, chalky, soft, greasy

texture.

2520-50

SHALE-50% Red brown, blocky, calcareous, silty, firm to

hard.

SANDSTONE-20% Light red, clear, quartzose, fine to medium

grained, sub angular, fair to poor sorted, unconsolidated.

SILTSTONE-20% Light brown, white, arenaceous,

argillaceous, slightly calcareous.

ANHYDRITE-10% White, light gray, chalky, soft, greasy

texture.

SHALE-30% Red brown, blocky, calcareous, silty, firm to

hard.

LIMESTONE-100% Light to medium gray, white, chalky, soft

to firm, lithographic, argillaceous, earthy, mudstone.

2580-2610

SHALE-10% Red brown, blocky, calcareous, silty, firm to

hard.

ANHYDRITE-10% White, light gray, chalky, soft, greasy

texture.

LIMESTONE-80% Light gray, white, chalky, soft to firm,

argillaceous, earthy, mudstone.

2610-40

LIMESTONE-100% Light to medium gray, white, chalky, soft

to firm, lithographic, argillaceous, earthy, mudstone.

2640-70

SHALE-20% Red brown, blocky, calcareous, silty, scattered

salt casts, firm to hard.

LIMESTONE-60% Light to medium gray, white, chalky, soft

to firm, lithographic, argillaceous, earthy, mudstone.

SANDSTONE-20% Light red, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous

cement, unconsolidated.

2670-2700

SHALE-30% Red brown, blocky, calcareous, silty, scattered

salt casts, firm to hard.

LIMESTONE-50% Light to medium gray, white, chalky, soft

to firm, lithographic, argillaceous, earthy, mudstone.

ANHYDRITE-20% White, light gray, chalky, soft, greasy

texture.

2700-30

SHALE-10% Red brown, blocky, calcareous, silty, scattered

salt casts, firm to hard.

LIMESTONE-20% Light to medium gray, white, chalky, soft

to firm, lithographic, argillaceous, earthy, mudstone.

SANDSTONE-70% Light red, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous

cement, unconsolidated.

2730-60	SHALE-20% Red brown, blocky, calcareous, silty, scattered salt casts, firm to hard. LIMESTONE-80% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone.
2760-90	SHALE-10% Red brown, blocky, calcareous, silty, scattered salt casts, firm to hard. LIMESTONE-90% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone.
2790-2820	SILTSTONE-90% White, anhydritic matrix, clay filled, firm. LIMESTONE-10% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone.
2820-50	SILTSTONE-10% White, anhydritic matrix, clay filled, firm. LIMESTONE-80% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone. ANHYDRITE-10% White, light gray, chalky, soft, greasy texture.
2850-80	LIMESTONE-100% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone.
2880-2910	LIMESTONE-100% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill.
2910-40	LIMESTONE-100% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill.
2940-70	LIMESTONE-100% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill.

2970-3000	LIMESTONE-100% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part.
3000-30	LIMESTONE-70% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part. SILTSTONE-30% White, anhydritic matrix, clay filled, firm.
3030-60	LIMESTONE-80% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part. SILTSTONE-20% White, anhydritic matrix, clay filled, firm.
3060-90	LIMESTONE-70% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part. SILTSTONE-30% White, anhydritic matrix, clay filled, firm.
3090-3120	LIMESTONE-70% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part. SILTSTONE-30% White, anhydritic matrix, clay filled, firm.
3120-50	LIMESTONE-80% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part. SILTSTONE-10% White, anhydritic matrix, clay filled, firm. SHALE-10% Red brown, blocky, calcareous, silty, scattered salt casts, firm to hard.
3150-80	LIMESTONE-100% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part.

LIMESTONE-60% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part. SILTSTONE-30% White, anhydritic matrix, clay filled, firm. SHALE-10% Red brown, blocky, calcareous, silty, scattered salt casts, firm to hard.

3210-40

LIMESTONE-90% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty inpart. SHALE-10% Red brown, blocky, calcareous, silty, scattered salt casts, firm to hard.

3240-70

LIMESTONE-90% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part. SHALE-10% Red brown, blocky, calcareous, silty, scattered salt casts, firm to hard.

3270-3300

LIMESTONE-80% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty inpart. SHALE-20% Red brown, blocky, calcareous, silty, scattered salt casts, firm to hard.

3300-30

LIMESTONE-100% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part.

3330-60

LIMESTONE-100% Light to medium gray, white, chalky, soft to firm, lithographic, argillaceous, earthy, mudstone, scattered anhydrite and calcite fracture infill, becoming silty in part.

SIDE TRACK #1

2470-2500

SHALE-20% Red brown, silty, blocky.

SILTSTONE-10% Red brown, white, argillaceous, arenaceous,

calcareous, anhydrite matrix in part.

SANDSTONE-70% Red brown, light red, clear, quartzose,

fine(lower) to medium(lower) grained, sub angular, fair to poor

sorted, clay matrix, calcareous cement, predominately

unconsolidated, friable, no show.

2500-30

SHALE-40% Red brown, silty, blocky.

SILTSTONE-10% Red brown, white, argillaceous, arenaceous,

calcareous, anhydrite matrix in part.

SANDSTONE-50% Red brown, light red, clear, quartzose,

fine(lower) to medium(lower) grained, sub angular, fair to poor

sorted, clay matrix, calcareous cement, predominately

unconsolidated, friable, no show.

2530-60

SHALE-80% Red brown, silty, blocky.

SILTSTONE-10% Red brown, white, argillaceous, arenaceous,

calcareous, anhydrite matrix in part.

SANDSTONE-10% Red brown, light red, clear, quartzose,

fine(lower) to medium(lower) grained, sub angular, fair to poor

sorted, clay matrix, calcareous cement, predominately

unconsolidated, friable, no show.

2560-90

SHALE-40% Red brown, light gray, blocky, earthy, slightly

calcareous.

LIMESTONE-60% Light gray, earthy, lithographic, mudstone.

2590-2620

SHALE-40% Red brown, light gray, blocky, earthy, slightly

calcareous.

LIMESTONE-60% Light gray, earthy, lithographic, mudstone.

2620-50

LIMESTONE-100% Light to medium gray, earthy,

lithographic, mudstone (70%), white, soft, chalky, mudstone

(30%).

LIMESTONE-100% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.

2680-2710

SHALE-40% Red brown, light gray green, light gray, blocky, slightly calcareous, waxy, silty.

LIMESTONE-60% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.

2710-40

SHALE-60% Red brown, light gray green, light gray, blocky, slightly calcareous, waxy, silty.
SILTSTONE-20% Red brown, arenaceous, argillaceous, calcareous.
SANDSTONE-20% White, red brown, very fine(upper) to medium (lower) grained, sub angular, fair to poor sorted, dirty silty matrix, slightly calcareous, tight, no show.

2740-70

SHALE-10% Red brown, light gray green, light gray, blocky, slightly calcareous, waxy, silty.

LIMESTONE-90% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.

2770-2800

SHALE-20% Red brown, light gray green, light gray, blocky, slightly calcareous, waxy, silty.

LIMESTONE-70% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.

SANDSTONE-10% White, red brown, very fine(upper) to medium (lower) grained, sub angular, fair to poor sorted, dirty silty matrix, slightly calcareous, tight, no show.

2800-30

SHALE-10% Red brown, light gray green, light gray, blocky, slightly calcareous, waxy, silty.

LIMESTONE-90% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.

2830-60	LIMESTONE-100% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.
2860-90	LIMESTONE-100% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.
2890-2920	LIMESTONE-100% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.
2920-50	SHALE-10% Red brown, light gray green, light gray, blocky, slightly calcareous, waxy, silty. LIMESTONE-90% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.
2950-80	LIMESTONE-100% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.
2980-3010	LIMESTONE-100% Light to medium gray, earthy, lithographic, mudstone(70%), white, soft, chalky, mudstone(30%), mottled, sand laminations.
3010-40	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.
3040-70	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.
3070-3100	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.

3100-30	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.
3130-60	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.
3160-90	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.
3190-3220	LIMESTONE-80% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone. SILTSTONE-20% White, arenaceous, argillaceous, limy, grades to silty limestone.
3220-50	LIMESTONE-90% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone. SILTSTONE-10% White, arenaceous, argillaceous, limy, grades to silty limestone.
3250-80	LIMESTONE-90% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone. SILTSTONE-10% White, arenaceous, argillaceous, limy, grades to silty limestone.
3280-3310	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.
3310-40	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.
3340-70	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.
3370-3400	LIMESTONE-100% Light gray, white, very fine crystalline in part, chalky, soft in part, argillaceous, earthy, mudstone.

SHALE-40% Red brown, blocky, silty, slightly calcareous. SILTSTONE-10% Light red, arenaceous, argillaceous, calcareous.

SANDSTONE-10% Red orange, very fine (upper) to fine (lower) grained, sub angular, fair to poor sorted, clay filled, tight.

LIMESTONE-40% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

3430-60

SHALE-10% Red brown, blocky, silty, slightly calcareous. SANDSTONE-90% Red orange, very fine (upper) to fine (lower) grained, sub angular, fair to poor sorted, clay filled, tight.

3460-90

SANDSTONE-100% Red orange, very fine (upper) to fine (lower) grained, sub angular, fair to poor sorted, clay filled, tight.

3490-3520

SHALE-20% Red brown, blocky, silty, slightly calcareous. SANDSTONE-50% Red orange, very fine (upper) to fine (lower) grained, sub angular, fair to poor sorted, clay filled, tight.

LIMESTONE-30% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

3520-50

SHALE-70% Red brown, white, blocky, silty, slightly calcareous.
SILTSTONE-30% White, arenaceous, argillaceous, calcareous.

3550-80

LIMESTONE-60% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

SHALE-30% Red brown, white, blocky, silty, slightly calcareous.

SILTSTONE-10% White, arenaceous, argillaceous, calcareous.

LIMESTONE-80% Light to medium gray, argillaceous, earthy, 3580-3610 lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SHALE-20% Red brown, white, blocky, silty, slightly calcareous. 3610-40 LIMESTONE-70% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SILTSTONE-30% White, arenaceous, argillaceous, calcareous. 3640-70 LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. 3690-3700 LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. 3700-30 LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. 3730-60 LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. 3760-3790 LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SHALE-30% Red brown, white, blocky, silty, slightly 3790-3820 calcareous. LIMESTONE-70% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

3820-50	SHALE-10% Red brown, white, blocky, silty, slightly calcareous. LIMESTONE-90% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
3850-3880	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
3880-3910	LIMESTONE-70% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SILTSTONE-30% White, arenaceous, argillaceous, calcareous.
3910-40	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
3940-70	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
3970-4000	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
4000-30	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
4030-60	LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

4060-90 LIMESTONE-60% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SILTSTONE-40% White, arenaceous, argillaceous, calcareous. 4090-4120 LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. 4120-50 LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. 4150-80 LIMESTONE-60% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SILTSTONE-30% White, arenaceous, argillaceous, calcareous. SANDSTONE-10% White, very fine (upper) to fine (upper) grained, sub angular, fair to poor sorted, clay filled, tight. LIMESTONE-70% Light to medium gray, argillaceous, earthy, 4180-4210 lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SILTSTONE-20% White, arenaceous, argillaceous, calcareous. SHALE-10% Red brown, silty, blocky, firm. 4210-40 LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. 4240-70 LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. 4270-4300 LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

LIMESTONE-100% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

4330-60

SHALE-10% Red brown, silty, blocky, firm.
ANHYDRITE-10% White, sucrosic texture, soft to firm.
LIMESTONE-80% Light to medium gray, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

4360-90

SHALE-40% Red brown, silty, sandy, blocky, firm, slightly calcareous.

ANHYDRITE-10% White, sucrosic texture, soft to firm.

LIMESTONE-50% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

SHALE-30% Red brown, silty, sandy, blocky, firm, slightly

4390-4420

calcareous.

ANHYDRITE-10% White, sucrosic texture, soft to firm, abundant salt casts, trace of potash.

LIMESTONE-20% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

SANDSTONE-40% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show.

4420-50

LIMESTONE-10% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SANDSTONE-50% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show. SHALE-40% Red brown, silty, sandy, blocky, firm, slightly calcareous.

SHALE-40% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.

LIMESTONE-10% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

ANHYDRITE-10% White, sucrosic texture, soft to firm, abundant salt casts, trace of potash.

SILTSTONE-20% White, limey, soft to firm.

4480-4510

LIMESTONE-10% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. SANDSTONE-50% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show. SHALE-40% Red brown, silty, sandy, blocky, firm, slightly calcareous.

4510-40

SHALE-50% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.
ANHYDRITE-10% White, sucrosic texture, soft to firm, abundant salt casts, trace of potash.
SILTSTONE-20% White, limey, soft to firm.

4540-70

SHALE-40% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-60% White, limey, soft to firm, sandy.

4570-4600

SHALE-80% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous. SILTSTONE-20% White, limey, soft to firm, sandy.

4600-30

SHALE-70% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.
SILTSTONE-20% White, limey, soft to firm, sandy.
ANHYDRITE-10% White, sucrosic texture, soft to firm, abundant salt casts, trace of potash.

SHALE-80% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.

SILTSTONE-20% White, limey, soft to firm, sandy.

4660-90

SHALE-20% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.
SILTSTONE-20% White, limey, soft to firm, sandy.
LIMESTONE-60% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

4690-4720

SHALE-20% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.
SILTSTONE-20% White, limey, soft to firm, sandy.
LIMESTONE-10% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
SANDSTONE-50% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show.

4720-50

SHALE-20% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.
SILTSTONE-10% White, limey, soft to firm, sandy.
LIMESTONE-20% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

4750-80

SHALE-20% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.
SILTSTONE-20% White, limey, soft to firm, sandy.
SANDSTONE-60% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show.

SHALE-30% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.

SILTSTONE-20% White, limey, soft to firm, sandy.

SANDSTONE-50% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show.

4810-40

SHALE-20% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.

SILTSTONE-40% White, limey, soft to firm, sandy.

SANDSTONE-40% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show.

4840-70

SHALE-60% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.
SILTSTONE-30% White, limey, soft to firm, sandy.
SANDSTONE-10% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show.

4870-4900

SHALE-10% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.

SILTSTONE-20% White, limey, soft to firm, sandy.

SANDSTONE-70% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show.

4900-30

SHALE-10% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.

SILTSTONE-20% White, limey, soft to firm, sandy.

SANDSTONE-70% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show.

SHALE-20% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.

SILTSTONE-20% White, limey, soft to firm, sandy.

SANDSTONE-40% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show.

LIMESTONE-20% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

4960-90

SHALE-60% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.
SILTSTONE-10% White, limey, soft to firm, sandy.
SANDSTONE-10% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show.
LIMESTONE-20% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

4690-5020

SHALE-10% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.
SILTSTONE-10% White, limey, soft to firm, sandy.
LIMESTONE-80% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

5020-50

SHALE-10% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.

SILTSTONE-10% White, limey, soft to firm, sandy.

SANDSTONE-10% White, clear, quartzose, fine to medium grained, sub angular, fair to poor sorted, clay matrix, calcareous cement, friable, predominantly unconsolidated, no show.

LIMESTONE-70% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

SHALE-10% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.
SILTSTONE-10% White, limey, soft to firm, sandy.
LIMESTONE-80% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

5080-5110

SHALE-10% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.
SILTSTONE-30% White, limey, soft to firm, sandy.
LIMESTONE-60% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

5110-40

SHALE-10% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.
SILTSTONE-40% White, limey, soft to firm, sandy.
LIMESTONE-50% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

5140-70

SHALE-10% Red brown, light gray, gray green, silty, sandy, blocky, firm, slightly calcareous.
SILTSTONE-30% White, limey, soft to firm, sandy.
LIMESTONE-60% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

5170-5200

SILTSTONE-20% White, limey, soft to firm, sandy, calcareous, anhydritic.
LIMESTONE-60% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.
ANHYDRITE-20% White, chalky, soft.

SHALE-30% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous.

SILTSTONE-10% White, light gray, gray brown, limey, soft to firm, sandy, calcareous, anhydritic.

SANDSTONE-10% White, tan, very fine to medium grained, sub angular, poor sorted, dirty clay matrix, limey, tight, no show.

LIMESTONE-40% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft.

5230-60

SHALE-30% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous.

LIMESTONE-60% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft.

5260-90

SHALE-40% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous, marly in part.

LIMESTONE-60% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

5290-5320

SHALE-70% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous, marly in part.

LIMESTONE-30% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

SHALE-30% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous.

LIMESTONE-60% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft.

5350-80

SHALE-70% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous, marly in part.

LIMESTONE-30% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

5380-5410

SHALE-70% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous, marly in part.

LIMESTONE-30% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

5410-40

SHALE-30% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous.

LIMESTONE-60% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part.

SHALE-10% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous.

LIMESTONE-70% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part.

SANDSTONE-10% White, light brown, very fine to fine grained, sub angular, clay matrix, calcareous cement, tight, no show.

5470-5500

SHALE-10% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous.

LIMESTONE-40% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part. SILTSTONE-40% White, light gray, arenaceous, argillaceous, limey.

5500-30

LIMESTONE-40% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part.

SHALE-20% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous.

LIMESTONE-40% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part.

SILTSTONE-30% White, light gray, arenaceous, argillaceous, limey.

5560-5590

SHALE-20% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous.

LIMESTONE-40% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part.

SILTSTONE-30% White, light gray, arenaceous, argillaceous, limey.

5590-5620

SHALE-20% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous.

LIMESTONE-40% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part.

SILTSTONE-30% White, light gray, arenaceous, argillaceous, limey.

SHALE-10% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous.

LIMESTONE-70% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part.

SILTSTONE-10% White, light gray, arenaceous, argillaceous, limey.

5650-5680

SHALE-30% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous.

LIMESTONE-30% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-30% White, chalky, soft, sucrosic, crystalline in part.

SILTSTONE-10% White, light gray, arenaceous, argillaceous, limey.

5680-5710

SHALE-30% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous.

LIMESTONE-40% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

ANHYDRITE-20% White, chalky, soft, sucrosic, crystalline in part

SILTSTONE-10% White, light gray, arenaceous, argillaceous, limey.

SHALE-20% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous.

LIMESTONE-40% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-20% White, chalky, soft, sucrosic, crystalline in part.

SANDSTONE-20% White, clear, quartzose, fine to medium grained, sub angular to rounded, fair to poor sorted, unconsolidated.

5740-70

SHALE-10% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous.

LIMESTONE-90% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part.

5770-5800

SHALE-20% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous.

LIMESTONE-70% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part.

5800-10

SHALE-20% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous.

LIMESTONE-70% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part.

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5810-20 SHALE-20% Light gray, white, soft, grades to argillaceous limestone, gray green, silty, sandy, blocky, firm, slightly calcareous. LIMESTONE-70% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part. ANHYDRITE-10% White, chalky, soft, sucrosic, crystalline in part. 5820-30 LIMESTONE-100% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part, abundant white calcite and anhydrite fracture in fill. 5830-40 LIMESTONE-100% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part, abundant white calcite and anhydrite fracture in fill. 5840-50 LIMESTONE-100% Light to medium gray, mottled, argillaceous, earthy, lithographic, very fine to microcrystalline, in part, white, chalky, soft, silty, mudstone in part, abundant white calcite and anhydrite fracture in fill. 5851-70 SHALE-70% Red brown, silty, blocky, firm, slightly calcareous. SILTSTONE-20% White, chalky, limey, firm, arenaceous. LIMESTONE-10% Light to medium gray, tan, very fine to

5870-5900 SHALE-10% Red brown, silty, blocky, firm, slightly calcareous.

LIMESTONE-90% Light to medium gray, tan, very fine to microcrystalline, lithographic, mudstone.

microcrystalline, lithographic, mudstone.

5900-30 LIMESTONE-100% Light to medium gray brown, tan, white, light gray, very fine to microcrystalline, dense, lithographic, mudstone.

5930-60	LIMESTONE-90% Light to medium gray brown, tan, white, light gray, very fine to microcrystalline, dense, lithographic, mudstone. SILTSTONE-10% White, chalky, limey, firm, arenaceous.
5960-90	LIMESTONE-100% Light to medium gray brown, tan, white, light gray, very fine to microcrystalline, dense, lithographic, mudstone, abundant fracture in fill.
5990-6020	LIMESTONE-100% Light to medium gray brown, tan, white, light gray, very fine to microcrystalline, dense, lithographic, mudstone, abundant calcite and anhydrite fracture in fill.
6020-50	LIMESTONE-100% Light to medium gray brown, tan, white, light gray, very fine to microcrystalline, dense, lithographic, mudstone, abundant calcite and anhydrite fracture in fill.
6050-80	LIMESTONE-100% Light to medium gray brown, tan, white, light gray, very fine to microcrystalline, dense, lithographic, mudstone, abundant calcite and anhydrite fracture in fill.
6080-6110	LIMESTONE-100% Light to medium gray brown, tan, white, light gray, very fine to microcrystalline, dense, lithographic, mudstone, abundant calcite and anhydrite fracture in fill.
6110-40	LIMESTONE-100% Light to medium gray brown, tan, white, light gray, very fine to microcrystalline, dense, lithographic, mudstone, abundant calcite and anhydrite fracture in fill, packstone to grainstone, white, light gray, sucrosic texture, chalky, oolitic.
6140-70	SHALE-10% Red brown, silty, blocky, firm, slightly calcareous. LIMESTONE-100% Light to medium gray brown, tan, white, light gray, very fine to microcrystalline, dense, lithographic, mudstone, abundant calcite and anhydrite fracture in fill, packstone to grainstone, white, light gray, sucrosic texture, chalky, oolitic.

SANDSTONE-100% White, clear, quartzose, fine(lower) to medium (lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 95% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity.

6200-30

SANDSTONE-100% White, clear, quartzose, fine(lower) to medium (lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 95% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity.

6230-60

SANDSTONE-100% White, clear, quartzose, fine(lower) to medium (lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 98% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity.

6260-90

SANDSTONE-100% White, clear, quartzose, fine(upper) to course(lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 99% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity.

SANDSTONE-100% White, clear, quartzose, fine(upper) to course(lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 98% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity.

6320-50

SANDSTONE-100% White, clear, quartzose, fine(upper) to course(lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 65% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity.

6350-80

SANDSTONE-100% White, clear, quartzose, fine(upper) to course(lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 60% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity, abundant quartz flour.

6380-6410

SHALE-10% Red brown, silty, blocky.
SILTSTONE-30% Light brown, brick red, arenaceous, argillaceous, anhydritic.
SANDSTONE-30% white, clear, very fine(upper) to fine(lower)
grained, clay matrix, calcareous cement, trace unconsolidated.
ANHYDRITE-30% White, chalky, silty, soft.

SHALE-40% Red brown, silty, blocky.

SILTSTONE-30% Light brown, brick red, arenaceous,

argillaceous, anhydritic.

SANDSTONE-20% white, clear, very fine(upper) to

fine(lower)

grained, clay matrix, calcareous cement, trace unconsolidated.

ANHYDRITE-10% White, chalky, silty, soft.

6440-70

SHALE-20% Red brown, silty, blocky.

SILTSTONE-30% Light brown, brick red, arenaceous,

argillaceous, anhydritic.

SANDSTONE-20% white, clear, very fine(upper) to

fine(lower)

grained, clay matrix, calcareous cement, trace unconsolidated.

ANHYDRITE-30% White, chalky, silty, soft.

6470-6500

SANDSTONE-100% White, clear, quartzose, fine(lower) to medium(upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 65% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-

16% intergranular porosity, abundant quartz flour.

6500-30

SANDSTONE-100% White, clear, quartzose, fine(lower) to medium(upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 65% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity, abundant quartz flour.

SANDSTONE-100% White, clear, quartzose, fine(lower) to medium(upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 95% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity, abundant quartz flour.

6560-90

SANDSTONE-100% White, clear, quartzose, fine(lower) to medium(upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 50% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity, abundant quartz flour.

6590-6620

SANDSTONE-100% White, clear, quartzose, fine (lower) to medium (upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 98% unconsolidated, rainbows on wash water, strong hydrocarbon odor, yellow white oil fluorescence, blue white milky cut fluorescence, yellow gold residual ring cut, 12-16% intergranular porosity, abundant quartz flour, weaker show, top mixed zone.

6620-50

SANDSTONE-100% White, clear, quartzose, fine(lower) to medium(upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 98% unconsolidated, minor show, oil water contact.

6650-80

SANDSTONE-100% White, clear, quartzose, fine(lower) to medium(upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, light brown oil stain on clasts, 65% unconsolidated, weak to no show.

SANDSTONE-100% White, clear, quartzose, fine(lower) to medium(upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 65% unconsolidated, weak to no show.

6710-40

SANDSTONE-100% White, clear, quartzose, very fine(lower) to fine (upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 65% unconsolidated, abundant medium to course scattered quartz grains, weak to no show.

6740-70

SANDSTONE-100% White, clear, quartzose, very fine(lower) to fine (upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 95% unconsolidated, abundant medium to course scattered quartz grains, abundant quartz flour, weak to no show.

6770-6800

SANDSTONE-100% White, clear, quartzose, very fine(upper) to fine (lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 50% unconsolidated, abundant medium to course scattered quartz grains, abundant quartz flour, weak to no show.

6800-30

SANDSTONE-100% White, clear, quartzose, very fine(upper) to fine (upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 70% unconsolidated, abundant medium to course scattered quartz grains, abundant quartz flour, weak to no show.

6830-60

SANDSTONE-100% White, clear, quartzose, very fine(upper) to fine (lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 20% unconsolidated, abundant medium to course scattered quartz grains, abundant quartz flour, weak to no show.

SANDSTONE-100% White, clear, quartzose, very fine(upper) to medium (lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 40% unconsolidated, abundant medium to course scattered quartz grains, abundant quartz flour, weak to no show.

6890-6908

SANDSTONE-100% White, clear, quartzose, very fine(upper) to fine (lower) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 40% unconsolidated, abundant medium to course scattered quartz grains, abundant quartz flour, weak to no show.



United States Department of the Interior

BUREAU OF LAND MANAGEMENT Utah State Office P.O. Boy 45155

P.O. Box 45155 Salt Lake City, UT 84145-0155



IN REPLY REFER TO 3180 UT-922

October 20, 2005

Wolverine Gas and Oil Corporation Attn: Richard D. Moritz One Riverfront Plaza 55 Campau, N.W. Grand Rapids, Michigan 49503-2616

Re:

3rd Revision of the Navajo Formation PA

Wolverine Unit

Sanpete and Sevier Counties, Utah

Gentlemen:

The 3rd Revision of the Navajo Formation Participating Area, Wolverine Unit, UTU80800A, is hereby approved effective as of September 1, 2005, pursuant to Section 11 of the Wolverine Unit Agreement, Sanpete and Sevier Counties, Utah.

The 3rd Revision of the Navajo Formation Participating Area results in an addition of 155.41 acres to the participating area for a total of 635.41 acres and is based upon the completion of Well No. 17-4, API No. 43-041-30035, located in the NW¼ SE¼ of Section 17, Township 23 South, Range 1 West (BHL), SLM&B, Federal Unit Tract No. 6, Federal Lease UTU73528, as being a well capable of producing unitized substances in paying quantities.

Copies of the approved request are being distributed to the appropriate agencies and one copy is returned herewith. Please advise all interested parties of the establishment of the 3rd Revision of the Navajo Formation Participating Area, Wolverine Unit, and the effective date.

Sincerely,

/s/ David H. Murphy

David H. Murphy Acting Chief, Branch of Fluid Minerals

Enclosure

RECEIVED OCT 2 1 2005



801 359 3940 SIATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS AND MINING

205,10-31 03:40PM #195 P.02/11

FORM 6

ENTITY ACTION FORM

Operator:

Wolverine Gas and Oil Company of Utah, LLC

Operator Account Number: N 1655

Address:

55 Campau NW, One Riverfront Plaza

city Grand Rapids

state MI zip 49503

Phone Number: (616) 458-1150

Well 1

API Number	Well	Name	QQ	Sec	Twp	Rng	Carrete					
4304130035	Wolverine Federal 17	-4	NWSE	17	238	1W	County					
Action Code	Current Entity Number	New Entity Number	S	pud Da	L	Entit	Sevier y Assignment ective Date					
C omments:	14559		13995		14559 13995 1/31/				5 9/1/2005	10	10/31/05	

NAVA

Well 2

API Number	Well		QQ	Sec	Twp	Rng	County
4304130038	Wolverine Federal 17	-5	SENE	17	23\$	1W	Sevier
Action Code	Current Entity Number	New Entity Number	S	pud Da		Enti	ly Assignmen fective Date
C mments:	14826	13995	3	/14/200	5		131/05

NAVA onective as of 8/1/2005 production.

Well 3

CONFIDENTIAL

API Number	304						
			QQ	Sec	Twp	Rng	County
4304130037	Wolverine Fedoral 17	NWNE	17	23\$	1W	Sevier	
Action Code	Current Entity Number	New Entity Number	Si	Spud Date		Entity Assignment Effective Date	
C ommente:	14667	13995	4,	/16/200	5		/31/05

ACTION CODES:

- A Establish new entity for new well (single well only)
- B Add new well to existing entity (group or unit well)
- C Re-assign well from one existing entity to another existing entity
- D Re-assign well from one existing entity to a new entity
- E Other (Explain in 'comments' section)

8 grijatura Manager Development

10/31/2005

Title

Date

(5/2000)

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(5/2000)

(CONTINUED ON BACK)

RECEIVEDNFIDENTIAL OCT 3 1 2005

51. INITIAL PRODUCTION DATE FIRST PRODUCED. INTERVAL A (As shown in item #26) LEST DATE: HOURS THREED: 9/5/2005 TEST PRODUCTION 9/16/2005 OIL - BBL GAS - MCH: WATER - HE 24 PROD. ME I HOD! RATES. CHOKE SIZE: TBG. FKESS 696 CSG. PRESS 0 AFI CORAVITY BTU - GAS Pumping 14/64 CAS/OIL HATIO 241 IR PRODUCTION 420 0 OII - RBL 40.00 (BAB - MCF: WATER - BBL: 0 RATES: O NTERVAL STATUS 696 Û Producing INTERVAL & (As shown in Item #26) DATE FIRST PRODUCED: EST DATE: IOURS TESTED: TEST PRODUCTION OIL - MHI : GAS MOT WATER - BUL: PROD. METHOD. CHUKE SIZE: RATES THE PRESS OFO. PRESS. AFI GHAVITY BTU - GAS GAS/OIL RATIO 24 HR PRODUCTION OIL - BBL GAS - MCF WATER - BBL: KATES INTERVAL STATUS: INTERVAL C (As shown in Item #26) DATE FIRST PRODUCED: TEST DATE HOURS TESTED TEST PRODUCTION OL-BRI: GAS - MCF: WATER - BUI PROD. METHOD: RATES -CHOKE SIZE: IRC. PRESS GEG. PRESS. API GRAVITY BTU - GAS GAR/OIL RATIO 24 HR PRODUCTION OIL - BBL GAS - MCF: WATER - BBL: INTERVAL STATUS: RATES: ~4 INTERVAL D (As shown in Hom #26) DATE FIRST PRODUCED. TEST DATE HOURS TESTED: TEST PRODUCTION OII. - BOLS GAE - MCH WATER BELL KATES. PROD METHOD: CHOKE SIZE TEG. PRESS CSG. PRESS. API GRAVITY HTU-GAS GASIGIL RATIO 24 HR PRODUCTION INL - BOL: GAS - MOF: WATER - BRI 22. DISPOSITION OF GAS (Sold, Used for Fuel, Ventod, Etc.) RATES: INTERVAL STATUS: Venting (gas too small to measure) 33. SUMMARY OF PUROUS ZONES (Include Aquifors): Show all Important cores of poxisity and contains thereof; Conad intervals and all drift-stem tosts, including diquit interval tostse, distributions used, time took open, flowing and anusin pressures and recoveries. 34. FORMATION (LDB) MARKERS:

Formation	Top (MD)	Bottom (ML)	Descriptions, Contents, etc.		
Arapien				Name	go T Ikto C cesusaeM)
Navajo	55 6,191	85 6,908	Water Oil & water	Arapien Twin Creek Navaio	0 5.863 6.191
. ADDITIONAL REMARK	Silasius			j .	

36. I heraby curtify that the foregoing and attached information is complete and current se determined from all available records:

NAME (PLEASE PRINT) JOHN VIONA SIGNATURE

Manager of Geology

9/22/2005

This report must be admitted within 30 days of

· completing or plugging a new well

drilling horizontal laterals from an existing well bore

recompleting to a different producing formation

reentering a previously plugged and abandoned well

significantly deepening an existing well bore below the previous bottom-hole depth drilling hydrocarbon exploratory holes, such as core samples and stratigraphic tosts

* ITEM 20: Show the number of completions if production is measured separately from two or more formations,

** ITEM 24: Cament Top — Show how reported top(s) of cornent were determined (circulated (CIR), calculated (CAL), cament bond log (CBL), temperature survey (TS)).

Send to:

Utah Division of Oil, Gas and Mitting 1594 West North Temple, Suite 1210

Phone: 801-538-5340

Box 145801

Гах: 801-359.3940

Sail I ske City, Utah 84114-5801

(6/2000)

CONFIDENTIAL RECEIVED OCT 3 1 2005



WOLVERINE GAS AND OIL COMPANY

OF UTAH, LLC

Energy Exploration in Partnership with the Environment

February 14, 2008

Mr. Stan Andersen Fluid Minerals Group Bureau of Land Management Richfield Field Office 150 East 900 North Richfield, Utah 84701

Re:

Sundry Notice - Wolverine Gas and Oil Company of Utah, LLC

Wolverine Federal 17-4

Dear Mr. Anderson:

Wolverine Gas and Oil Company of Utah, LLC (Wolverine) respectfully submits the enclosed Sundry Notice in triplicate for the Wolverine Federal 17-4 well. The Sundry Notice provides our notice of intent to fracture stimulate the referenced well. If regulatory approval is obtained, the planned activities on the Wolverine Federal 17-4 are expected to commence as early as February 14, 2008.

Please accept this letter as Wolverine's written request for confidential treatment of all information relating to this notice.

Please advise if you have any questions or need additional information.

Sincerely,

cc:

Ellis M. Peterson

Senior Production Engineer

Wolverine Gas and Oil

FEB 2 0 2008

RECEIVED COPY

UDOGM w/ attachments in duplicate DIV. OF OIL, GAS & MINING

COPY SENT TO OPERATOR



UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

abandoned w	en. Use Form 3160-3	(APD) for such pro	posais.		
SUBMIT IN TR	IPLICATE- Other inst	tructions on rever	se side.	7. If Unit or 0	CA/Agreement, Name and/or No.
1. Type of Well Oil Well □ □	Wolverine Federal Exploration Unit 8. Well Name and No.				
2. Name of Operator Wolverine G	Wolverine Federal 17-4 9. API Well No.				
3a. Address 55 Campau NW, Grand Rapid	43-041-3	0035 Pool, or Exploratory Area			
4. Location of Well (Footage, Sec.,	T., R., M., or Survey Description)			Covenan	
Surface: 1680' FNL & 2 Bottom-Hole: 2109' FSL & 19	1	Parish, State			
12. CHECK A	PPROPRIATE BOX(ES) TO	INDICATE NATUR	E OF NOTICE, R	EPORT, OR	OTHER DATA
TYPE OF SUBMISSION		TYF	E OF ACTION		
Notice of Intent Subsequent Report Final Abandonment Notice	Acidize Alter Casing Casing Repair Change Plans Convert to Injection	☐ Deepen ☐ Fracture Treat ☐ New Construction ☐ Plug and Abandon ☐ Plug Back	Production (State Reclamation Recomplete Temporarily Ab	´	Water Shut-Off Well Integrity Other
13. Describe Proposed or Complet If the proposal is to deepen dire	ed Operation (clearly state all pert				

3. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

It is planned to fracture stimulate the Navajo Formation in the Wolverine Federal 17-4 through existing perforations. The proposed workover is expected to commence as early as Fedruary 25, 2008.

See the attached procedure for details of planned activities.

Attachment: Wolverine Federal 17-4 Workover Procedure

RECEIVED FFB 2 0 2008

		FLD 2 0	2000
14. I hereby certify that the foregoing is true and correct Name (Printed/Typed)	Tables	DIV. OF OIL, GAS	S & MINING
Ellis M. Peterson	Title Sr. 1	Production Engineer	
Signature Elli MA Almon	Date	102/14/2008	
THIS SPACE FOR FED	ERAL OR ST	ATE OFFICE USE	
Approved by Conditions of approval, if any, are attached. Approval of this notice does recrify that the applicant holds legal or equitable title to those rights in the which would entitle the applicant to conduct operations thereon.	not warrant or	Gas and Mining Date	Federal Approval Of This Action is Necessary
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crim States any false, fictitious or fraudulent statements or representations as to a	e for any person know any matter within its it	vingly and willfully to make to any der	partment or agency of the United

Wolverine Gas & Oil Company of Utah, LLC Workover Procedure

Wolverine Federal 17-4

Covenant Field

Purpose:

Fracture Stimulate Upper Navajo

PERTINENT INFORMATION

Location:

1680' FNL, 2249' FWL (SENW)

Section 17, Township 23 South, Range 1 West

Sevier County, Utah

Elevation:

5736' GL, 5753' KB

TD:

6908'

PBTD:

6610' (tubing tagged cement top)

API No.:

43-041-30035

Casing:

13-3/8", 68.0# @ 2027', cemented to surface

9-5/8", 47.0#, HCP-110, LT&C @ 5823', cemented with 470 sks 50:50 Poz 7", 23.0#, HCP-110, LT&C @ 6908', cemented with 295 sks 50:50 Poz

Wellhead:

Tubing Head Flange – 7-1/16" 5k w/ 2-7/8" EUE top connection

Tubing:

5150' of 2-7/8", 6.5#, N-80, EUE, 8rd w/SN, x-over, and ESP equipment

Production Casing Specs:

7", 23.0#, HCP-110, LT&C, 8rd, ID: 6.366" Drift: 6.241"

Collapse: 5650 psi

Burst: 8720 psi (80% 6976 psi)

Tubing Specs:

2-7/8", 6.5#, N-80/L-80, EUE, 8rd, ID: 2.441" Drift: 2.347"

Collapse: 11,170 psi Burst: 10,570 psi (80% 8456 psi)

Joint: 145,000 lbs (80% 116,000 lbs)

Capacities:

7", 23.0#:

0.03936 Bbls/ft 0.2210 ft³/ft

2-7/8", 6.5#

0.00579 Bbls/ft 0.0325 ft³/ft

7" x 2-7/8" Annulus

 $0.0313 \text{ Bbls/ft} \quad 0.1759 \text{ ft}^3/\text{ft}$

3-1/2", 9.3#

0.00870 Bbls/ft 0.04883 ft³/ft

7" x 3-1/2" Annulus

0.0275 Bbls/ft 0.1542 ft³/ft

BH Temperature: 182 °F @ 6378' MD (6100' TVD)

Current Upper Navajo Formation Completion Interval: 6292' – 6419' (8/27/05)

Current Perforations:

6292' - 6310' MD (6018' - 6035' TVD), 18', 72 holes

6327' - 6350' MD (6051' - 6073' TVD), 23', 92 holes

6360' - 6362' MD (6083' - 6084' TVD), 2', 8 holes

6370' - 6382' MD (6092' - 6104' TVD), 12', 48 holes

6386' - 6388' MD (6107' - 6109' TVD), 2', 8 holes



```
6406' - 6409' MD (6126' - 6129' TVD), 3', 12 holes 6411' - 6413' MD (6131' - 6133' TVD), 2', 8 holes 6416' - 6419' MD (6136' - 6139' TVD), 3', 12 holes
```

Perforation Depths are referenced to Halliburton SDL-DSN-GR dated 03/9/05. CBL-GR-CCL dated 07/21/05 is 15' shallow to open-hole logs at perforation depth.

Proposed Re-Perforation Interval: 6292' – 6310'

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<u>Proposed New Perforations:</u> 6292' - 6310' MD (6018' - 6035' TVD), 18', 108 holes
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PROCEDURE

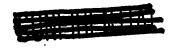
- 1. Remove fence, cover ground, and prepare location for workover. Spot four 500 Bbl tanks and fill one with completion fluid (CF) consisting of filtered produced water containing 21 gallons (1000 ppm) Baker Petrolite WAW 3003 non-ionic surfactant, 5.25 gallons (250 ppm) XC102W biocide, and 1.25 gallons (60 ppm) OSW5200 Oxygen Scavenger.
- 2. Shut in well and disconnect power.
- 3. MIRUSU. Reverse circulate completion fluid to recover oil and kill well. Disconnect flow lines, ND wellhead, and NU BOP.
- 4. RU cable spoolers. POOH and lay down ESP equipment. RD cable spoolers.
- 5. PU tubing as needed to round trip a 6-1/8" bit and casing scraper to PBTD. Tag PBTD and spot 10 Bbls of 9+ ppg salt brine containing recommended biocide and corrosion inhibitor to fill casing below perforations. POOH with bit and casing scraper.
- 6. RIH with a 7" (23#) RBP and retrieving head on 2-7/8" tubing. RU wireline and run a CCL/GR log through tubing to determine WLM to SLM depth correction. RD wireline and set RBP it at 6435' WLM. Pull end of tubing to ~6250'.
- 7. Rig up Halliburton and place a sand plug from RBP at 6435' to 6321' by circulating slickened completion fluid at down tubing and up casing while trickling 27 sacks (2700 lb) of 20/40 mesh sand into the pump intake fluid. Slow the circulation rate down to 1.0 BPM after pumping 30 Bbls of fluid. Displace sand laden fluid to end of tubing with 35 Bbls of completion fluid. RD pumping service and pull tubing up 13 stands, and then wait at least 2 hours for sand to settle.
- 8. RIH and tag sand top with tubing and POOH with tubing and RBP retrieving head.
- 9. RU wireline service. Perforate 6292' 6310' WLM with 0.40"+ diameter holes using 4" hollow carriers loaded 6 SPF on 60° phasing with 22+ gram charges. RD and release wireline unit.
- 10. Change out BOP pipe rams for 3-1/2" tubing. RIH with a 7" (23#) stimulation packer on rented 3-1/2", 6.3#, P-105, EUE, 8rd tubing and set packer at ~6150'. Slack off minimum of 30,000 lbs tubing weight. Connect rig pump and establish an injection rate down tubing with produced water at 3000 psi and monitor casing to check for tubing/packer leaks.
- 11. RU Halliburton to fracture stimulate through the isolated perforations at 6292' 6310' using 20,000 lbs of 20/40 mesh ISP with 2% SandWedge and 10,000 gallons of 20# Delta 200 fluid. Sand concentration will be ramped from 1 to 5 ppg. Have a full 500 Bbl tank of



filtered (5 micron) produced water at 100 °F available to mix stimulation fluid. Plan to use the rig pump to hold 2000 psi on 7" casing during frac and install a pressure relief valve to limit casing pressure at 3000 psi maximum. Install piping and a choke to allow for controlled flow back following the frac. Three different Protechnics RA tracer materials are to be used to separately tag the pad fluid, 1-3 ppg sand stages, and 4-5 ppg sand stages.

- 12. Hold safety meeting and pressure test surface lines to 10,000 psi. Pump fracture stimulation per accepted recommendation at 25 BPM. Maintain 2000 psi on 7" casing with rig pump while pumping down tubing. Monitor tubing pressure for 15 minutes following frac, and then start controlled flow back of stimulation fluid at a rate not exceeding 1/2 BPM. RD and release Halliburton.
- 13. After tubing pressure falls to 0 psi, open bypass on packer and reverse circulate clean with 100 Bbls of completion fluid. Release packer and POOH laying down the 3-1/2" tubing.
- 14. Change out BOP pipe rams for 2-7/8" tubing. RIH with a RBP retrieving head, 6 joints of tubing, 7" (23#) packer, and a SN on 2-7/8" tubing. Reverse circulate sand out to 6430' and continue circulating until returning fluid is sand free.
- 15. RU slick line unit and run a Protechnics SpectraScan log inside the tubing from 6430' to 6100'. RD and release slick line unit and Protechnics.
- 16. Pull up and set packer at ~6190'.
- 17. RU and swab for cleanup until load fluid is recovered and rate, fluid level, and water-cut stabilize.
- 18. Release packer and circulate clean to RBP. Release RBP and POOH with tubing and tools.
- 19. RU to run ESP equipment and Y-tool. Determine length of instrument tube required to extend from Y-tool to a couple of inches up from the bottom of the ESP centralizer. Preassemble (weld) the tubes so a full length tube will be on bottom across the motor and Centinel and drift the tubes to make sure 1" instruments will run through it. Make up the Centrilift ESP equipment with a 7" casing centralizer on bottom, Centinel, 450 series motor, 400P18SSD pump with intake and discharge, a 10' 2-3/8" tubing sub, Y-tool with blanking plug in place, 2-3/8"x 2-7/8" crossover, 2.25" ID SN, and a 6' 2-7/8" tubing sub. Connect instrument to Y-tool and band the tube to the ESP equipment as recommended. Connect and band new cable and continue running ESP assembly in on 2-7/8" production tubing. Land tubing with bottom of assembly at ±6150'.
- 20. ND BOP, install wellhead, connect electricity to ESP and check startup and rotation.
- 21. RDMOSU.
- 22. Plan to run a production log and possibly obtain a pressure build-up as soon as well production stabilizes.





Form 3160-5 (April 2004)

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

FORM APPROVED
OM B No. 1004-0137
Expires: March 31, 2003

_	TC T 1:	A 11	T 1 N I	
	UTU-73	528		
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SUNDRY	U1U-/3528				
Do not use th abandoned we	e-enter an	6. If Indi	an, Allottee or Tribe Name		
SUBMIT IN TRI	PLICATE- Other instr	uctions on rev	erse side.		or CA/Agreement, Name and/or No.
1. Type of Well ✓ Oil Well □ □	Gas Well□□ Other			Verine Federal Exploration Unit	
2. Name of Operator Wolverine G	as and Oil Company of Utah, I	LLC			erine Federal 17-4
3a Address		3b. Phone No. (incl	ude area code)		11-30035
55 Campau NW, Grand Rapid		616-458-1150			and Pool, or Exploratory Area
4. Location of Well (Footage, Sec.,	T., R., M., or Survey Description)				nant Field
Surface: 1680' FNL & 2: Bottom-Hole: 2109' FSL & 19	249' FWL, Sec. 17, T23S, R01V 32' FEL, Sec. 17, T23S, R01W	W, SLB&M ⁷ , SLB&M			ty or Parish, State r County, Utah
12. CHECK AF	PROPRIATE BOX(ES) TO	INDICATE NAT	URE OF NOTICE, RE	EPORT, C	OR OTHER DATA
TYPE OF SUBMISSION		Т	YPE OF ACTION		
Notice of Intent ✓ Subsequent Report	Acidize Alter Casing Casing Repair	Deepen ✓ Fracture Treat New Construction	, h	·	Water Shut-Off Well Integrity Other
Final Abandonment Notice	Change Plans Convert to Injection	Plug and Abandor Plug Back	Temporarily Aba	indon	
testing has been completed. Fir determined that the site is ready The Wolverine Federal 17- interval. Early screen-out formation. The well bore v See the attached summary	al Abandonment Notices shall be for final inspection.)	irements, including reclamand a fracture stimulational of 3100 lbs of 20/40 m	tion, have b was pum esh IS pro		
14. Thereby certify that the foreg Name (Printed/Typed) Ellis M. Peterson		Title	Sr. Production Enginee	er	
Signature	News	Date	04	/11/2008	
	THIS SPACE FOR F	EDERAL OR	STATE OFFICE	USE	
Approved by			Title		Date
Conditions of approval, if any, are a certify that the applicant holds legal which would entitle the applicant to	or equitable title to those rights in		Office		

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

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**Receive (Instructions on page 2)

Workover Summary and Results

Wolverine Federal 17-4 Covenant Field

March 3 to March 20, 2008

Purpose of Workover: Fracture Stimulate Upper Navajo

Work Summary:

- 1. Pulled production equipment.
- 2. Ran a bit and casing scraper and tagged new PBTD at 6643'
- 3. Set RBP at 6435' and plugged back with sand from the RBP to 6318'.
- 4. Re-perforated 6292' 6310' with 6 SPF.
- 5. Ran a stimulation packer on 3-1/2" rented tubing and set packer at 6131'.
- 6. Halliburton pumped fracture stimulation designed to place 20,000 lbs of 20/40 mesh Econoprop through perforations at 6292' 6310'. Screen-out occurred with 3 ppg stage at perforations with only 3100 lbs of proppant into formation. Pad and sand stages were tagged with different RA materials.
- 7. Washed sand out of tubing and casing using coiled tubing.
- 8. Pulled frac string and pulled RBP.
- 9. Ran Protechnics SpectraLog.
- 10. Swabbed for clean-up.
- 11. Ran Weatherford Y-Tool and ESP. Placed well on production.

Current Perforations: (Upper Navajo)

```
6292' - 6310' MD (6018' - 6035' TVD), 18', 180 holes
6327' - 6350' MD (6051' - 6073' TVD), 23', 92 holes
6360' - 6362' MD (6083' - 6084' TVD), 2', 8 holes
6370' - 6382' MD (6092' - 6104' TVD), 12', 48 holes
6386' - 6388' MD (6107' - 6109' TVD), 2', 8 holes
6406' - 6409' MD (6126' - 6129' TVD), 3', 12 holes
6411' - 6413' MD (6131' - 6133' TVD), 2', 8 holes
6416' - 6419' MD (6136' - 6139' TVD), 3', 12 holes
```

Production before Workover: 221 BOPD and 0 BWPD with 913 psi FBHP (3/2/08)

Production after Workover: 789 BOPD and 0 BWPD with 1538 psi FBHP (4/3/08)

Form 3160-5 (April 2004)

UNITED STATES DEPARTMENT OF THE INTERIOR

FORM APPROVED OM B No. 1004-0137 Expires: March 31, 2007

5.	Lease Serial No.	•	
	UTU-73528		

SUNDRY NOTICES AND REPORTS	7. House Contaction
Do not use this form for proposals to drill of abandoned well. Use Form 3160-3 (APD) for	or to re-enter an 6. If Indian, Allottee or Tribe Name such proposals.
SUBMIT IN TRIPLICATE- Other instructions	7. If Unit or CA/Agreement, Name and/or No. Wolverine Federal Exploration Unit
1. Type of Well ☐ ☐ ☐ Gas Well ☐ ☐ Other ☐ Other	8. Well Name and No.
2. Name of Operator Wolverine Gas and Oil Company of Utah, LLC	Wolverine Federal 17-4 9. API Well No.
3a. Address 3b. Phon	e No. (include area code) 43-041-30035
30 Campan 1111, Class 112, 112, 112, 112, 112, 112, 112, 11	58-1150 10. Field and Pool, or Exploratory Area Covenant Field
4. Location of Well (Footage, Sec., T., R., M., or Survey Description)	11 County or Parish. State
Surface: 1680' FNL & 2249' FWL, Sec. 17, T23S, R01W, SLB&l Bottom-Hole: 2109' FSL & 1932' FEL, Sec. 17, T23S, R01W, SLB&M	
12. CHECK APPROPRIATE BOX(ES) TO INDICA	TE NATURE OF NOTICE, REPORT, OR OTHER DATA
TYPE OF SUBMISSION	TYPE OF ACTION
	re Treat Reclamation Well Integrity Construction Recomplete Vorkover
Change Plans Plug at	nd Abandon Temporarily Abandon
Convert to injection Lairing B	
If the proposal is to deepen directionally or recomplete horizontally, give subs Attach the Bond under which the work will be performed or provide the Bond following completion of the involved operations. If the operation results in a testing has been completed. Final Abandonment Notices shall be filed only at determined that the site is ready for final inspection.)	including estimated starting date of any proposed work and approximate duration thereof. urface locations and measured and true vertical depths of all pertinent markers and zones. I No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once filer all requirements, including reclamation, have been completed, and the operator has
Wolverine Gas & Oil Co. of Utah, LLC intends to workover the W Perforations will be added in the Navajo and stimulated as necessa	Olverine Federal 17-4. The perforations in this well are underperforming, ary. The well will be returned to production once an ESP and y-tool are run.
COPY SENT TO OPERATOR	
Date: 3-22-2012	
Initials: KS	
•	
 I hereby certify that the foregoing is true and correct Name (Printed/Typed) Matthew Rivers 	Title Production Engineer
Matthew Rivers	
Signature	Date 03/02/2012
THIS SPACE FOR FEDER	AL OR STATE OFFICE USE
Approved by	Title Pet Eng Date 3/21/12
Conditions of approval, if any, are attached. Approval of this notice does not we certify that the applicant holds legal or equitable title to those rights in the subjection.	arrant or Federal Approval Of This

Action Is Necessary

which would entitle the applicant to conduct operations thereon. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

RECEIVED

MAR 0 9 2012

Dustin Doucet - Wolverine Covenant Perf Intervals

From:

"Matt Rivers" <mrivers@wolvgas.com>

To:

<dustindoucet@utah.gov>

Date:

3/21/2012 2:34 PM

Subject: Wolverine Covenant Perf Intervals

Dustin,

Below are the wells that I sent you Sundries on for our planned workovers at Covenant. All of the proposed intervals will be in the Covenant Navajo. We are planning to start on the WF 17-6 April 2nd then move to the WF 17-4 later in the month.

Please let me know when you approve the Sundries.

Wolverine Federal 17-4

6490' - 6500', 6517' - 6537'& 6550' - 6570'

Wolverine Federal 17-6

6306' - 6310' & 6353' - 6363'

Wolverine Federal 18-1

No perforations planned

Wolverine Federal 20-2

6873' - 6898', 6912' - 6934', 6950' - 6958' & 6972' - 6992'

Regards,

Matt Rivers

Production Engineer

Wolverine Gas & Oil Co.

(616) 929-1932 - Office Direct

(616) 490-1954 - Cell

(616) 458-0969 - Fax

RECEIVED

SUNDRY Do not use the abandoned we	UNITED STATES DEPARTMENT OF THE SURBAU OF LAND MAN NOTICES AND REF his form for proposals to ell. Use Form 3160-3 (A	INTERIOR AGEMENT PORTS ON WEL o drill or to re-el APD) for such pro	nter an posals.	FORM APPROVED OMB No. 1004-0137 Expires: March 31, 2007 5. Lease Serial No. UTU-73528 6. If Indian, Allottee or Tribe Name N/A 7. If Unit or CA/Agreement, Name and/or No.		
1 Type of Well		20110110 011 101010		Wolverine Federal Unit		
[✓] Oil Well□□□	Gas Well□□ Other			8. Well Name and No. Wolverine Federal 17-4		
2. Name of Operator Wolverine G	as and Oil Company of Utah,			9. API Well No. 43-041-30035		
3a. Address 55 Campau NW, Grand Rapid	s, MI 49503	3b. Phone No. (include 616-458-1150	area code)	10. Field and Pool, or Exploratory Area		
4. Location of Well (Footage, Sec.,	T., R., M., or Survey Description)			Covenant Field 11. County or Parish, State		
Surface: 1680' FNL & 2: Bottom-Hole: 2109' FSL & 19	249' FWL, Sec. 17, T23S, R01' 32' FEL, Sec. 17, T23S, R01W	W, SLB&M /, SLB&M		Sevier County, Utah		
12. CHECK A	PPROPRIATE BOX(ES) TO	INDICATE NATURI	E OF NOTICE, R	EPORT, OR OTHER DATA		
TYPE OF SUBMISSION		TYP	E OF ACTION			
If the proposal is to deepen dire Attach the Bond under which the following completion of the invitesting has been completed. Fit determined that the site is ready Wolverine completed a we 6292' - 6310' and 6327' - were added in the Navajo perforation set was added	netionally or recomplete horizontall ne work will be performed or proviously of operations. If the operation all Abandonment Notices shall be a for final inspection.) Orkover on the Wolverine Fede 6350' with 50 bbls of 4% KC1 at 6490' - 6500' 6517' - 6537	y, give subsurface location de the Bond No. on file w results in a multiple compl filed only after all requiren eral 17-4 on May 11, 20 and analyzed for the d ' and 6550' – 6560' and as returned to producti	s and measured and truith BLM/BIA. Requiretion or recompletion inents, including reclams. 12. A DFIT was puresign of potential fractional fractions of the properties of the	Well Integrity Other Workover		
14. I hereby certify that the fore Name (Printed/Typed)	going is true and correct					
Matthew Rivers	<i></i>	Title Pr	oduction Engineer			
Signature		Date		06/27/2012		
	THIS SPACE FOR	FEDERAL OR S	TATE OFFICE	USE		

Approved by

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Title

Office

Date



Covenant Field

Federal 17-4

API# 43-041-30035

SE/NW Sec 17, T23N, R1W

Sevier County, Utah

4/22/2012

Spot in service unit, hooked up pump lines.

4/23/2012

RUSU, ND wellhead, NU BOP's. RU cable spoolers and pulled out of hole with ESP. PU & tripped in hole with bit and casing scraper to PBTD, RU pump lines and reverse circulated well clean, RD pump lines and laid down 10 joints. SWIFN

Note: Moderate to severe corrosion was found on the motor, seal section and instrument tubing. All corrosion was below the pump intake and appeared to be from Co2. There was no corrosion on any of the BHA above the pump intake. See failures in the photo tab.

<u>4/24/2</u>012

Plan to pull out of hole with casing scraper / TIH with DFIT BHA / Swab well for rate prior to pumping DFIT Opened well, pulled out of hole with casing scraper, pick up and run in hole with DFIT BHA, set plug at 6355', set packer at 6230'. Pressure tested casing to 1000 psi. RU wireline unit and correlated plug and packer settings, RD and released wireline unit. SWIFN

Note: See DFIT BHA tab for details on the bottom hole assembly

Plan to pump DFIT

4/25/2012

Opened well, RU swab equipment and swabbed well as follows.

Swab runs - 7

Water cut - 20%

Average rate -151 bfpd

Average fluid level - 3750

Total fluid recovered - 34 bbls

Perf intervals open - 6292'-6350'

See 4-25 Swab report for details.

RD swab equipment, RU pump lines, opened bypass on packer, circulated 50 bbls of 4% KCL water, RD pump lines. RU Slickline unit and made 1.790" gauge ring run to confirm XN nipple depth, RIH with tandem pressure gauges and set off in the DFIT BHA, RIH with N test plug to 6220'. RU Halliburton pump equipment, pressure tested lines to 9500 psi. Pumped DFIT as follows

Event	<u>Rate</u>	Max pressure
Loaded hole with 3.7 bbls of 4% KCL	2 bpm	0 psi
Pumped 100 bbls 4% KCL	3.7 bpm	3625 psi
Slowed rate and continued pumping 4% KCL while landing N test plug	2 bpm	2800 psi

Landed plug and shut down pump. SWIFN

Note: There was not a notable breakdown during pumping.

Plan to leave well shut in for 24 hrs then pull out of hole with pressure gauges.

4/26/2012 Opened well, 6500 psi on tubing, bled off pressure and pulled out of hole with downhole pressure gauges.

Rig crew travel home.

4/27/2012 Rig crew on days off

4/28/2012 Rig crew on days off

4/29/2012 Rig crew on days off
4/30/2012 Rig crew travel to location

Plan to swab 6292'-6310' & 6327'-6350' for post DFIT rate / Perforate 6550'-6560'



5/1/2012

Opened well, 0 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:

Swab runs - 17

Water cut - 17%

Average rate -350 bfpd

Average fluid level - 4000

Total fluid recovered - 116 bbls

Perf intervals open - 6292'-6310' & 6327'-6350'

See 5-1 Swab report for details.

Note: The water cut does not represent the actual oil water cut from these perf intervals, there was still 20 bbls of water that had not been recovered after pumping the DFIT. The swab data was gathered only to compare the rates pre and post DFIT.

RD swab equipment, pulled out of hole with plug and packer. RU wireline and perforated as follows:

Perf interval - 6550'-6560'

Titan Part # EXP 3325-321T

.41 entry hole

25 gram charges

45.16" penetration

4" EXP gun loaded 6 spf on 60° phasing.

RD and released wireline unit, picked up and tripped in hole with plug, retrieving head, 4' sub, HD packer, one joint, cup type seating nipple and tubing to surface. Set plug at 6580', set packer at 6482'. SWIFN Plan to swab perf interval 6550'-6560' for rate and clean up.

5/2/2012

Opened well, 0 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:

Swab runs - 8

Water cut - 0%

Average rate -50 bfpd

Average fluid level - 4000

Total fluid recovered - 41 bbls

Perf intervals open - 6550'-6560'

See 5-2 Swab report for details.

SWIFN, Plan to acidize perf interval 6550'-6560' / Swab for rate and clean up.

5/3/2012

Opened well, 0 psi tubing, 0 psi casing. RU Halliburton acid equipment and pumped acid on perf interval 6550' - 6560' as follows:

<u>Detail</u>	Bbls	Cumm	Max BPM	Max PSI
Pumped 26.34 bbls CF to fill tubing	26.34	26.34	4	0
Opened bypass on packer	~	~	~	~
Spotted 05.95 bbls 7 1/2% FE HCL	5.95	32.29	2	46
Spotted 11.90 bbls 7 1/2% FE HCL containing 50 buoyant balls	11.9	44.19	2	117
Spotted 05.95 bbls 7 1/2% FE HCL	5.81	50	2	117
Spotted 09.52 bbls 4% KCL with chemicals (CF)	9.59	59.59	2	117
Closed bypass on packer	~	~	~	~
Pumped CF	3.7	59.84		1100
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	3.7	63.54	0.6	1070

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.28	63.82	0.6	1070
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	63.91	0.6	1004
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	80.0	63.99	0.6	970
Shut down and waited for pressure to bleed off to 750 psi	•			
Pumped CF	0.07	64.06	0.6	1046
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.11	0.6	1000
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.16	0.6	993
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.21	0.6	960
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.26	0.6	968
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.31	0.6	1020
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	64.37	0.6	1000
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.42	0.6	984
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.47	0.6	1020
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	64.53	0.6	1006
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.58	0.6	974
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.63	0.6	1023
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.68	0.6	990
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.73	0.6	981
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	64.79	0.6	986
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.04	64.83	0.6	986
Shut down and waited for pressure to bleed off to 750 psi	_			
Pumped CF	0.06	64.89	0.6	1025
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.94	0.6	985
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.06	65	0.6	991
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.04	65.04	0.6	985
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.1	0.6	981
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.04	65.14	0.6	972
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	65.22	0.6	1050
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.27	0.6	1004
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.33	0.6	975
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.38	0.6	981
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.44	0.6	1043
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.49	0.6	1030
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.54	0.6	995
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.6	0.6	1017
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.65	0.6	985
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.7	0.6	984
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.75	0.6	982
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.81	0.6	1020
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.86	0.6	991
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.91	0.6	982
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.97	0.6	1027
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	66.02	0.6	995
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	66.07	0.6	980
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.14	0.6	1092

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	66.2	0.6	1020
Shut down and waited for pressure to bleed off to 750 psi	•			
Pumped CF	0.06	66.26	0.6	1063
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.33	0.6	1075
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.4	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	66.48	0.6	1088
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.55	0.6	1113
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.62	0.6	1089
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.69	0.6	1086
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.76	0.6	1101
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.83	0.6	1065
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	66.89	0.6	1079
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.96	0.6	1074
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.03	0.6	1067
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.1	0.6	1067
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.17	0.6	1070
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	67.23	0.6	1046
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	67.28	0.6	1030
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.35	0.6	1052
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	67.41	0.6	1053
Shut down and waited for pressure to bleed off to 750 psi		ě		
Pumped CF	0.07	67.48	0.6	1070
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.55	0.6	1050
Shut down and waited for pressure to bleed off to 750 psi				•

Pumped CF	0.06	67.61	0.6	1074
Shut down and waited for pressure to bleed off to 750 psi	0.07	07.00		4000
Pumped CF	0.07	67.68	0.6	1092
Shut down and waited for pressure to bleed off to 750 psi		07.75		4000
Pumped CF	0.07	67.75	0.6	1060
Shut down and waited for pressure to bleed off to 750 psi			• •	4000
Pumped CF	0.07	67.82	0.6	1068
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.06	67.88	0.6	1040
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	67.94	0.6	1045
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.01	0.6	1058
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	68.07	0.6	1062
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.14	0.6	1079
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.21	0.6	1054
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.04	68.25	0.6	873
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	68.31	0.6	1046
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	68.41	0.6	1057
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.48	0.6	1111
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	68.56	0.6	1122
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.63	0.6	1129
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.7	0.6	1095
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.77	0.6	1061
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	68.83	0.6	1048
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.9	0.6	1075
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.97	0.6	1064
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.04	0.6	1088

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.11	0.6	1063
Shut down and waited for pressure to bleed off to 750 psi	•			
Pumped CF	0.06	69.17	0.6	1070
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	69.25	0.6	1112
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	69.31	0.6	1072
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	80.0	69.39	0.6	1078
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	69.45	0.6	1069
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.52	0.6	1067
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.59	0.6	1084
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	69.67	0.6	1090
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.74	0.6	1078
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.81	0.6	1095
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.88	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	69.94	0.6	1057
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.02	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.09	0.6	1104
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.16	0.6	1104
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.24	0.6	1104
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.31	0.6	1114
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.39	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.46	0.6	1097
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.54	0.6	1100
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.06	70.6	0.6	1083
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.08	70.68	0.6	1096
Shut down and waited for pressure to bleed off to 750 psi	0.00	70.00	0.0	1030
Pumped CF	0.08	70.76	0.6	1111
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.83	0.6	1113
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.9	0.6	1102
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.98	0.6	1113
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	71.05	0.6	1116
Shut down and waited for pressure to bleed off to 750 psi	0.00	74.40		4400
Pumped CF Shut down and waited for procesure to blood off to 750 pc.	0.08	71.13	0.6	1106
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.08	71.21	0.6	1122
Shut down and waited for pressure to bleed off to 750 psi	0.00	11.21	0.0	1122
Pumped CF	0.07	71.28	0.6	1115
Shut down and waited for pressure to bleed off to 750 psi	0.07	11.20	0.0	1110
Pumped CF	0.08	71.36	0.6	1117
Shut down and waited for pressure to bleed off to 750 psi			,	
Pumped CF	0.07	71.43	0.6	1120
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	71.51	0.6	1110
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	71.6	0.6	980
Shut down and waited for pressure to bleed off to 900 psi				
Pumped CF	0.03	71.63	0.6	990
Shut down and waited for pressure to bleed off to 900 psi				
Pumped CF	0.05	71.68	0.6	1084
Shut down and waited for pressure to bleed off to 900 psi				
Pumped CF	0.04	71.72	0.6	987
Shut down and waited for pressure to bleed off to 900 psi				
Pumped CF	0.06	71.78	0.6	1138
Shut down and waited for pressure to bleed off to 900 psi	0.05	74.00	0.0	4400
Pumped CF Shut down and waited for pressure to bleed off to 750 psi	0.05	71.83	0.6	1192
Pumped CF	0.09	71.92	0.6	1315
Shut down and waited for pressure to bleed off to 750 psi	0.08	11,34	0.0	1310
Pumped CF	0.08	72	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi		· -		
Pumped CF	0.07	72.07	0.6	1092
•				

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.15	72.22	0.6	1088
Shut down and waited for pressure to bleed off to 750 psi	•			
Pumped CF	0.08	72.3	0.6	1094
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	72.37	0.6	1069
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	72.44	0.6	1045
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	72.52	0.6	1097
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	72.58	0.6	1044
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	72.66	0.6	1090
Shut down and waited for pressure to bleed off to 750 psi				•
Pumped CF	0.07	72.73	0.6	1037
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	72.79	0.6	1009
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	72.85	0.6	1047
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	72.94	0.6	1126
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.01	0.6	1082
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.08	0.6	1058
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.15	0.6	1079
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.22	0.6	1066
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.29	0.6	1052
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.36	0.6	1085
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.43	0.6	1045
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.5	0.6	1085
Shut down and waited for pressure to bleed off to 750 psi				,
Pumped CF	0.07	73.57	0.6	1058
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	73.65	0.6	1087
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.08	73.73	0.6	1098
Shut down and waited for pressure to bleed off to 750 psi	0.00	70.70	0.0	1000
Pumped CF	0.07	73.8	0.6	1046
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.87	0.6	1108
Shut down and waited for pressure to bleed off to 750 psi		. 5.5.	0.0	,,,,,
Pumped CF	0.04	73.91	0.6	1090
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	74.02	0.6	1077
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	74.1	0.6	1100
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.19	74.29	0.6	1185
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	74.37	0.6	1156
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	74.46	0.6	1179
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	74.55	0.6	1166
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	74.63	0.6	1167
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	74.72	0.6	1177
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	74.8	0.6	1134
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	74.85	0.6	1189
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.13	74.98	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.07	0.6	1182
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.16	0.6	1181
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.25	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	75.35	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.44	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	75.52	0.6	1099
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	75.6	0.6	1161
	•			

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	75.71	0.6	1181
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.8	0.6	1169
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	75.88	0.6	1142
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.97	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.05	0.6	1117
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.13	0.6	1136
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	76.2	0.6	1040
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	76.27	0.6	1055
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	76.36	0.6	1176
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	76.45	0.6	1160
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.53	0.6	1138
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.61	0.6	1151
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.69	0.6	1139
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	76.78	0.6	1167
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	76.87	0.6	1145
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.95	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.04	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.13	0.6	1177
Shut down and waited for pressure to bleed off to 750 psi				-
Pumped CF	0.08	77.21	0.6	1126
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.3	0.6	1170
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.39	0.6	1155
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.08	77.47	0.6	1152
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.56	0.6	1135
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.65	0.6	1170
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	77.73	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	77.81	0.6	1145
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.9	Ó.6	1159
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	78	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.09	0.6	1151
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	80.0	78.17	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	80.0	78.25	0.6	1144
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.34	0.6	1153
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.43	0.6	1176
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.52	0.6	1169
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.61	0.6	1170
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.7	0.6	1173
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	78.8	0.6	1180
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	78.88	0.6	1166
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	78.98	0.6	1179
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.07	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.16	0.6	1183
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.25	0.6	1144
Shut down and waited for pressure to bleed off to 750 psi			_ ,	
Pumped CF	0.09	79.34	0.6	1166

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	79.42	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.51	0.6	1178
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.6	0.6	1140
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.69	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.78	0.6	1171
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.87	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.96	0.6	1173
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.05	0.6	1160
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	80.13	0.6	1153
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	80.23	0.6	1177
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.32	0.6	1152
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	80.42	0.6	1176
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.51	0.6	1148
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.6	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.69	0.6	1169
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.78	0.6	1158
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.87	0.6	1169
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.96	0.6	1161
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.05	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.14	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	81.22	0.6	1139
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.09	81.31	0.6	1173
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.4	0.6	1167
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.49	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.58	0.6	1143
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.67	0.6	1150
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.76	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.85	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.94	0.6	1161
Shut down and waited for pressure to bleed off to 750 psi		•		
Pumped CF	0.09	82.03	0.6	1162
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.12	0.6	1145
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	82.2	0.6	1154
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	82.3	0.6	1161
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.39	0.6	1141
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.48	0.6	1151
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.57	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi		-		
Pumped CF	0.09	82.66	0.6	1141
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.75	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	82.83	0.6	1142
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.92	0.6	1148
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	83.01	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	83.1	0.6	1170
Shut down and waited for pressure to bleed off to 500 psi				
Pumped CF	0.13	83.23	0.6	1138

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	83.33	0.6	1178
Shut down and waited for pressure to bleed off to 750 psi	•			
Pumped CF	0.09	83.42	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.26	83.68	0.6	1280
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	83.78	0.6	1207
Shut down and waited for pressure to bleed off to 750 psi			•	
Pumped CF	0.09	83.87	0.6	1195
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	83.97	0.6	1192
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.07	0.6	1197
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.17	0.6	1211
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.27	0.6	1207
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	84.38	0.6	1207
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.48	0.6	1211
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.58	0.6	1241
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.68	0.6	1214
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	84.79	0.6	1223
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.89	0.6	1215
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.99	0.6	1231
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.09	0.6	1230
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.19	0.6	1193
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.29	0.6	1202
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.39	0.6	1230
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	85.5	0.6	1241
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.1	85.6	0.6	1185
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.7	0.6	1194
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.8	0.6	1241
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.9	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86	0.6	1197
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.1	0.6	1229
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.2	0.6	1209
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.3	0.6	1203
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.4	0.6	1181
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.5	0.6	1211
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.6	0.6	1207
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.7	0.6	1194
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.8	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	86.89	0.6	1179
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.99	0.6	1176
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	87.09	0.6	1187
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	87.19	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	87.28	0.6	1189
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	87.39	0.6	1225
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	87.49	0.6	1202
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	87.6	0.6	1231
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	87.7	0.6	1245

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	87.8	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi		•		
Pumped CF	0.11	87.91	0.6	1249
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.14	88.05	0.6	1226
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	88.14	0.6	1139
Shut down and waited for pressure to bleed off to 750 psi		-		
Pumped CF	0.09	88.23	0.6	1158
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.12	88.35	0.6	1252
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	88.44	0.6	1156
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	88.54	0.6	1200
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	88.64	0.6	1210
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	88.73	0.6	1182
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	88.83	0.6	1173
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	88.92	0.6	1162
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	89.02	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	89.12	0.6	1187
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	89.21	0.6	1166
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	89.3	0.6	1206
Shut down and waited for pressure to bleed off to 750 psi	•			
Pumped CF	0.09	89.39	0.6	1160
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	89.49	0.6	1149
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	89.58	0.6	1201
Shut down and waited for pressure to bleed off to 750 psi		•		
Pumped CF	0.1	89.68	0.6	1182
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	89.78	0.6	1217
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.09	89.87	0.6	1186
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	89.96	0.6	1206
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	90.07	0.6	1188
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.17	0.6	1233
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.27	0.6	1210
Shut down and waited for pressure to bleed off to 750 psi	•			
Pumped CF	0.1	90.37	0.6	1202
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	90.46	0.6	1155
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.56	0.6	1241
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	90.67	0.6	1217
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.77	0.6	1178
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	90.86	0.6	1198
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.96	0.6	1178
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	91.05	0.6	1158
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	91.15	0.6	1213
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	91.24	0.6	1163
Shut down for 5,10,15				

Note: Displaced acid 1.49 bbls past the top perf, after the well sits for the night there should be approximately 6.49 bbls of water past the top perf depth.

Note: There were no signs of communication with the open perforations above this interval.

General details	<u>Pressure</u>
ISIP	Not available
5 Min	413 psi
10 Min	213 psi
15 Min	119 psi
Max Treating Pressure	1315 psi
Max Acid Rate	0.6 bpm
Avg Treating Pressure	935 psi
Load to Recover	64.9 bbls

Note: See 5-3 Acid stim 10 second data tab for details

Plan to swab perf intervals 6550'-6560' for rate and clean up.

5/4/2012

Opened well, 0 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:

Swab runs - 12

Water cut - 50%

Average rate -66 bfpd

Average fluid level - 5850

Total fluid recovered - 72 bbls

Perf intervals open - 6550'-6560'

See 5-4 Swab report for details.

Note: Water cut is not accurate due to the slow fluid entry.

Released packer and pulled out of hole with tubing and packer, RU wireline unit and perforated well as follows.

Perf interval - 6490'-6500' & 6517'-6537'

Titan Part # EXP 3325-321T

.41 entry hole

25 gram charges

45.16" penetration

4" EXP gun loaded 6 spf on 60° phasing.

RD and released wireline unit, picked up and tripped in hole with retrieving head, 4' sub, HD packer, one joint, cup type seating nipple and tubing to surface. Latched onto plug and set at 6545', set packer at 6447'. SWIFN

Plan to swab perf intervals 6490'-6500' & 6517'-6537' for rate and clean up.

5/5/2012

Opened well, 0 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:

Swab runs - 17

Water cut - 5%

Average rate -520 bfpd

Average fluid level - 4000

Total fluid recovered - 116 bbls

Perf intervals open -6490'-6500' & 6517'-6537'

See 5-5 Swab report for details.

Plan to pump acid on perf intervals 6490'-6500' & 6517'-6537'

5/6/2012

Opened well, 30 psi tubing, 0 psi casing. RU Halliburton acid equipment and pumped acid on perf intervals 6490'-6500' & 6517'-6537' as follows:

<u>Detail</u>	Bbls	Cumm	Max BPM	Max PSI
Pumped CF to fill tubing	0	0	0	0
Opened bypass on packer	~	~	~	~
Spotted 7 1/2% FE HCL	9.52	9.52	2	390
Spotted 7 1/2% FE HCL containing 150 buoyant balls	23.88	33.4	2	170
Closed bypass on packer	~	~	~	~
Pumped 7 1/2% FE HCL	13.43	46.83	0.5	2500
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	0.68	47.51	0.5	2500
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	0.69	48.2	0.5	2500

Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	0.72	48.92	0.5	2490
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	0.62	49.54	0.5	2491
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	21.96	71.5	0.4	2720
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped CF	26.5	98	0.7	2770

Note: There were no signs of communication with the open perforations above this interval.

General details	<u>Pressure</u>
ISIP	1930 psi
5 Min	374 psi
10 Min	217 psi
15 Min	145 psi
Max Treating Pressure	2770 psi
Max Acid Rate	0.6 bpm
Avg Treating Pressure	2412 psi
Load to Recover	60.6 bbls

Note: See 5-6 Acid stim 1 second data tab for details

RD and released acid equipment, RU swab equipment and swabbed well as follows:

Swab runs - 15

Water cut - 0%

Average rate - 367 bfpd

Average fluid level - 4250

Total fluid recovered - 123 bbls

Perf intervals open -6490'-6500' & 6517'-6537'

See 5-6 Swab report for details.

Plan to continue swabbing for 1/2 day / Pull tbg and pkr / Perforate 6252'-6266' / TIH with tbg & pkr

Well flowed back 10 bbls of oil to the frac tank overnight, RU swab equipment and swabbed well as follows:

Swab runs - 31

Water cut - 3%

Average rate - 573 bfpd

Average fluid level - 4850

Total fluid recovered - 233 bbls

Perf intervals open -6490'-6500' & 6517'-6537'

See 5-7 Swab report for details.

SWIFN

Plan to reset the plug / Pull tbg and pkr / Perf 6252'-6266' / TIH with tbg / Swab for rate and clean up.

Opened well, 90 psi tubing, 0 psi casing. Released plug and packer, reset plug at 6281', pressure tested to 1000 psi, RU swab equipment and swabbed fluid level down to 2500'. RD swab equipment, released packer

and pulled out of the hole with tubing and packer. RU wireline unit and perforated well as follows:

Perf interval - 6252'-6266'

Titan Part # EXP 3325-321T

5/7/2012

5/8/2012

Page 20 of 22

.41 entry hole

25 gram charges

45.16" penetration

4" EXP gun loaded 6 spf on 60° phasing.

RD and released wireline unit, picked up and tripped in hole with retrieving head, 4' sub, HD packer, one joint, cup type seating nipple and tubing to surface. Set packer at 6165', RU pump line and pressure tested packer to 1000 psi. RD pump lines, RU swab equipment and swabbed well as follows.

Swab runs - 14

Water cut - 55% and falling

Average rate - 780 bfpd

Average fluid level - 3750

Total fluid recovered - 135 bbls

Perf intervals open -6252'-6266'

See 5-8 Swab report for details.

SWIFN

Note: Corrosion was found in the tubing collars while tripping in the hole with tubing today, the corrosion was noticed at 1500' from surface. New tubing collars were installed from 1500' to the surface. There may be more collar corrosion below the 1500' depth that had not been noticed previously. Inspections below the 1500' level will be made during the next pipe trip. Also note that the tubing pins had corrosion as well. See tubing and collar corrosion photos in the photos tab.

Plan to continue swabbing for 1/2 day until the fluid cut stabilizes / move plug and packer / swab all intervals together for rate and cut.

5/9/2012

Opened well, 40 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:

Swab runs - 13

Water cut - 40%

Average rate - 722 bfpd

Average fluid level - 3600

Total fluid recovered - 123 bbls

Perf intervals open -6250'-6266'

See 5-9 Swab report for details.

RD swab equipment, released packer, RU swab equipment and made two runs to remove oil from tubing. RD swab equipment, released plug and reset at 6572', set packer at 6185'. RU swab equipment and swabbed all perf intervals as follows:

Swab runs - 12

Water cut - 40%

Average rate - 833 bfpd

Average fluid level - 3450

Total fluid recovered - 121 bbls

Perf intervals open -6250'-6560'

See 5-9a Swab report for details.

SWIFN

Plan to release pkr and plug / pull out of hole with tubing changing corroded tubing collars as needed.

Opened well, 30 psi tubing, 0 psi casing. Bled pressure off tubing, released packer and plug, pulled out

5/10/2012

of the hole with tubing plug and packer. SWIFN

Note: Changed the remaining corroded tubing collars. All collars were changed from surface to 3000', the remaining tubing collars in the string had no signs of corrosion.

Plan to install ESP and turn well into production.

5/11/2012

Opened well, 0 psi. RU cable spoolers, picked up and run in hole with 6" centralizer, Centinel, motor, seal, pump, 2 3/8" x 2 7/8" XO, 10' x 2 3/8" sub, Y-tool, 2 3/8" x 2 7/8" XO, 6' x 2 7/8" sub, 1 joint 2 7/8" N-80 tbg, cup type SN and 191 joints N-80 tubing to surface. Made final splice on lower pig tail, landed well, ND BOP's NU wellhead. Turned well into production.

Note: Repaired cable splice that's aproximatly 1000' from surface.

This well is currently producing from the upper and lower Navajo

5/11/2012

07 Hour production, 045 bopd, 128 bwpd, 50 Hz, BHP 1352

5/12/2012

24 Hour production, 216 bopd, 283 bwpd, 50 Hz, BHP 1522

5/13/2012

24 Hour production, 267 bopd, 136 bwpd, 50 Hz, BHP 1594

24 Hour production, 308 bopd, 153 bwpd, 55 Hz, BHP 1342

Supervisor:

7 ony E. Cook

Rig Operator:

Robert Miller



Ground Elevation: 5,736 KB Elevation: 5,753' Wolverine Federal 17-4 API # 43-041-30035 Covenant Field Section 17, T23S, R1W Sevier County, Utah

(Not to Scale)

121'

Deviated Well

Surface: 1680' FNL 2249' FWL, SE NW, 17-23S-1W Top of Pay (6191' MD): 2264' FSL, 2062' FEL, NW SE, 17-23S-1W Total Depth (6908' MD): 2109' FSL, 1932' FEL, NW SE, 17-23S-1W

2127'

Conductor Casing (11/22/04)

Size: 20", 0.25" wall Depth Landed: 121'

Cement Data: Cemented to surface with 640 sks Class "G"

Surface Casing (2/11/05)

Size/Wt/Grade: 13-3/8", 68#, J-55, STC, 8rd

Depth Landed: 2127' MD

Cement Data: 650 sks CBM Lite (10.5 ppg, 4.12 cf/sk), 470 sks Type V

TOC 5100' (15.6 ppg, 1.19 cf/sk), Top job w/ 25 sks Class "G"

....

Intermediate Casing (3/4/05)

Size/Wt/Grade: 9-5/8", 47#, HCP-110, LTC, 8rd

Depth Landed: 5823' MD

Cement Data: 470 sks 50:50 Poz (13.0 ppg, 1.71 cf/sk)

TOC 5667'

Production Casing (9/4/05)

Size/Wt/Grade: 7", 23#, HCP-110, LTC, 8rd

Properties: 8720 psi burst, 6.241" drift, 6.366" ID, 0.0393 Bbl/ft Capacity

Depth Landed: 6908' MD

Cement Data: 295 sks 50:50 Poz (14.35 ppg, 1.23 cf/sk)

SN 6015'

Upper Navajo Perforations

6252' - 6266' MD (5979' - 5993' TVD), 14' 084 holes (5/08/12)

6292' - 6310' MD (6018' - 6035' TVD), 18' 180 holes (8/27/05)-(3/8/08)

6327' - 6350' MD (6051' - 6073' TVD), 23' 092 holes (8/27/05)

6360' - 6362' MD (6083' - 6084' TVD), 2' 008 holes (8/27/05)

6370' - 6382' MD (6092' - 6104' TVD), 12' 048 holes (8/27/05)

6386' - 6388' MD (6107' - 6109' TVD), 2' 008 holes (8/27/05)

6406' - 6409' MD (6126' - 6129' TVD), 3' 012 holes (8/27/05)

6411' - 6413' MD (6131' - 6133' TVD), 2' 008 holes (8/27/05) 6416' - 6419' MD (6136' - 6139' TVD), 3' 012 holes (8/27/05)

Upper Navajo 6252' - 6419'

PI 60811

EOT 6101

Lower Navajo Perforations

6490' - 6500' MD (6206' - 6216' TVD), 10' 060 holes (5/04/12)

6517' - 6537' MD (6232' - 6252' TVD), 20' 120 holes (5/04/12)

6550' - 6560' MD (6264' - 6254' TVD), 10' 060 holes (5/01/12)

6908'

PBTD 6643'

Lower Navajo

6490' - 6560'

Mid-Perf = 6406' MD (6126' TVD), 119' M (104' TV), 692 holes



Wolverine Federal 17-4 API# 43-041-30035 **Covenant Field** Section 17, T23S, R1W Sevier County, Utah

Tubing (05/11/12)

6096' WLM (5831' TVD) Centinel Pump intake 6081' WLM (5816' TVD) Y-Tool Fish 6054' WLM (5790' TVD) Seating Nipple 6015' WLM (5752' TVD)

PBTD

(08/26/05) Tagged fill @ 6643' WLM (03/05/08) Tagged fill @ 6643' WLM (04/23/12) Tagged fill @ 6628' WLM

ı ubiii	ng Detail (3/19 17.00	KB
	-2.00	Landed above GL
191	6000.30	Tubing - 2-7/8", 6.5#, N-80, EUE, 8rd
101	1.10	SN - 2-7/8", EUE, 8rd, 2.25" ID
i	30.68	Tubing - 2-7/8", 6.5#, N-80, EUE, 8rd
1	6.30	Sub - 2-7/8", 6.5#, N-80, EUE, 8rd
1	0.77	X-over - 2-3/8" x 2-7/8", EUE, 8rd
1	2.54	Y-Tool, Weatherford - 1.053" drift instrument tube
1	10.02	Sub - 2-3/8", 4.7#, N-80, EUE, 8rd
1	0.78	X-over - 2-3/8" x 2-7/8", EUE, 8rd
1	13.78	Pump w/ Intake - Centrilift P8, Model 400PLSSD, 130 stage
1	6.11	Seal - Model FSB3 DB HL
1	8.16	Motor – Centrilift MSP, 45 Hp, 1495V/19A
1	4.10	Downhole pressure sensor, Centinel III
1	1.20	Centralizer 6" collapsible
		·
	6100.83	EOT (6100.83' KB WLM)

Note:

No check or drain valve in this well.
Blanking plug in Y-Tool has a 5/8" OD catch rod
Tubing capacity = 0.00579 Bbl/ft, Burst = 10570 psi, Joint Yield = 144960 lbs

Directional Data:

MD	TVD	<u>incl.</u>	MD	TVD	<u>Incl.</u>
500	500	3.1	3500	3378	19.8
750	749	5.3	4000	3848	19.8
1000	997	12.1	4500	4322	19.3
1500	1485	10.9	5000	4793	20.1
1750	1731	13.8	5500	5262	19.7
2000	1966	21.7	6000	5738	15.9
2500	2426	20.1	6500	6216	17.2
3000	2901	16.1	6908	6610	12.2 E



Wolverine Federal 17-4 API # 43-041-30035 Covenant Field Section 17, T23S, R1W Sevier County, Utah

Wellhead Information

- Tubing head flange is 7-1/16", 5M with a 2-7/8" EUE 8rd top connection.
- Outer casing valve 13-3/8" x 9-5/8" annulus
- Inner casing valve 9-5/8" x 7" annulus

Stimulation

<u>9/3//05</u>: 6327' - 6419' w/ 5800 gal 7.5% HCl. ATR = 3.3 BPM, ATP = 3400 psi, ISDP = 2400 psi 6292' - 6310' w/ 2000 gal 7.5% HCl. ATR = 3.5 BPM, ATP = 2750 psi, ISDP = 2000 psi

3/11/08: 6292' - 6310' w/ 3100 lbs 20/40 mesh Econoprop with Sandwedge in Deltafrac 200 fluid, ATR = 25.3 BPM, ISDP = 5300 psi (after screen-out). Protechnics RA Sb-124 tracer in pad and IR-192 in sand stages.

5/3/12: 6550' - 6560' w/ 1000 gal 7.5% HCl. ATR = 0.6 BPM, ATP = 935 psi

<u>5/6/12:</u> 6490' - 6500' & 6517' - 6537' w/ 3000 gal 7.5% HCI ATR = 0.5 BPM, ATP = 2412 psi, ISIP = 1930 psi

Notes

Surface Location: Latitude = 38° 48' 19.4600", Longitude = -111° 56' 02.4750"

(7/21/05): Cement top at 5670' on CBL-CCL-GR

(1/30/08): Available Logs: DLL/MSFL, HRI, SDL/DSN, EMI, MRIL, CBL

Form 3160-5 (April 2004)

FORM APPROVED

UNITED STATES OM B No. 1004-0137 Expires: March 31, 2007 DEPARTMENT OF THE INTERIOR JUL 2 0 2012 BUREAU OF LAND MANAGEMENT 5. Lease Serial No. UTU-73528 SUNDRY NOTICES AND REPORTS ON WELLS AND REPORTS 6. If Indian, Allottee or Tribe Name Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals. 7. If Unit or CA/Agreement, Name and/or No. SUBMIT IN TRIPLICATE- Other instructions on reverse side. Wolverine Federal Unit 1. Type of We Öil Well 🗆 🗆 Gas Well 🗆 Well Name and No. Wolverine Federal 17-4 2. Name of Operator Wolverine Gas and Oil Company of Utah, LLC API Well No. 43-041-30035 3a. Address 3b. Phone No. (include area code) 55 Campau NW, Grand Rapids, MI 49503 616-458-1150 10. Field and Pool, or Exploratory Area Covenant Field 4. Location of Well (Footage, Sec., T., R., M., or Survey Description) 1680' FNL & 2249' FWL, Sec. 17, T23S, R01W, SLB&M SENW 11. County or Parish, State Surface: Bottom-Hole: 2109' FSL & 1932' FEL, Sec. 17, T23S, R01W, SLB&M Sevier County, Utah 12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA TYPE OF SUBMISSION TYPE OF ACTION Acidize 1 Production (Start/Resume) Water Shut-Off Deepen Notice of Intent Alter Casing Fracture Treat Reclamation → Well Integrity ✓ Other Workover Casing Repair New Construction Subsequent Report Recomplete Change Plans Plug and Abandon Temporarily Abandon Final Abandonment Notice Convert to Injection Plug Back Water Disposal 13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BlA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.) Wolverine completed a workover on the Wolverine Federal 17-4 on May 11, 2012. A DFIT was pumped in existing perforation intervals at 6292' - 6310' and 6327' - 6350' with 50 bbls of 4% KCl and analyzed for the design of potential fracture stimulation in the future. Perforations were added in the Navajo at 6490' - 6500', 6517' - 6537' and 6550' - 6560' and acidized with 4000 gallons of 7-1/2% FE HCL. A final perforation set was added at 6250'-6266' and the well was returned to production with a rate of 410 BOPD and 175 BWPD with a FBHP of 1200 psi. See attached WBD and Daily Reports for additional details. RECEIVE JUN 28 2012 Richfield BLM Field Office 14. I hereby certify that the foregoing is true and correct Name (Printed/Typed) Title Production Engineer 06/27/2012 Signature Date THIS SPACE FOR FEDERAL OR STATE OFFICE USE Date

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Title

Office

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease

which would entitle the applicant to conduct operations thereon.



Ground Elevation: 5,736 KB Elevation: 5,753'

Wolverine Federal 17-4 API # 43-041-30035 Covenant Field Section 17, T23S, R1W Sevier County, Utah



(Not to Scale)

Deviated Well

Surface: 1680' FNL 2249' FWL, SE NW, 17-23S-1W Top of Pay (6191' MD): 2264' FSL, 2062' FEL, NW SE, 17-23S-1W Total Depth (6908' MD): 2109' FSL, 1932' FEL, NW SE, 17-23S-1W



Conductor Casing (11/22/04)

Size: 20", 0.25" wall Depth Landed: 121'

Cement Data: Cemented to surface with 640 sks Class "G"



Size/Wt/Grade: 13-3/8", 68#, J-55, STC, 8rd

Depth Landed: 2127' MD

Cement Data: 650 sks CBM Lite (10.5 ppg, 4.12 cf/sk), 470 sks Type V

(15.6 ppg, 1.19 cf/sk), Top job w/ 25 sks Class "G"



Intermediate Casing (3/4/05)

Size/Wt/Grade: 9-5/8", 47#, HCP-110, LTC, 8rd

Depth Landed: 5823' MD

Cement Data: 470 sks 50:50 Poz (13.0 ppg, 1.71 cf/sk)

TOC 5667' CSG 5823'

Production Casing (9/4/05)

Size/Wt/Grade: 7", 23#, HCP-110, LTC, 8rd

Properties: 8720 psi burst, 6.241" drift, 6.366" ID, 0.0393 Bbl/ft Capacity

Depth Landed: 6908' MD

Cement Data: 295 sks 50:50 Poz (14.35 ppg, 1.23 cf/sk)

SN 6015'

Upper Navajo Perforations

6252' - 6266' MD (5979' - 5993' TVD), 14' 084 holes (5/08/12)

6292' - 6310' MD (6018' - 6035' TVD), 18' 180 holes (8/27/05)-(3/8/08)

6327' - 6350' MD (6051' - 6073' TVD), 23' 092 holes (8/27/05)

6360' - 6362' MD (6083' - 6084' TVD), 2' 008 holes (8/27/05)

6370' - 6382' MD (6092' - 6104' TVD), 12' 048 holes (8/27/05)

6386' - 6388' MD (6107' - 6109' TVD), 2' 008 holes (8/27/05)

6406' - 6409' MD (6126' - 6129' TVD), 3' 012 holes (8/27/05) 6411' - 6413' MD (6131' - 6133' TVD), 2' 008 holes (8/27/05)

6416' - 6419' MD (6136' - 6139' TVD), 3' 012 holes (8/27/05)

Upper Navajo 6252' - 6419'

Lower Navaio

6490' - 6560'

PI 6081'

EOT 6101

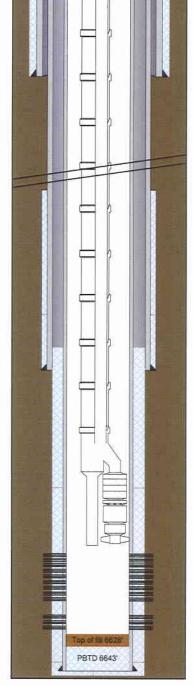
Lower Navajo Perforations

6490' - 6500' MD (6206' - 6216' TVD), 10' 060 holes (5/04/12)

6517' - 6537' MD (6232' - 6252' TVD), 20' 120 holes (5/04/12)

6550' - 6560' MD (6264' - 6254' TVD), 10' 060 holes (5/01/12)

6908 Mid-Perf = 6406' MD (6126' TVD), 119' M (104' TV), 692 holes





Wolverine Federal 17-4 API # 43-041-30035 Covenant Field Section 17, T23S, R1W Sevier County, Utah

Tubing (05/11/12)

Centinel 6096' WLM (5831' TVD)
Pump intake 6081' WLM (5816' TVD)
Y-Tool Fish 6054' WLM (5790' TVD)
Seating Nipple 6015' WLM (5752' TVD)

PBTD

(08/26/05) Tagged fill @ 6643' WLM (03/05/08) Tagged fill @ 6643' WLM (04/23/12) Tagged fill @ 6628' WLM

Tubin	g Detail (3/19	1/08/
1 ability	9 Detail (3/18	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
İ	-2.00	Landed above GL
191	6000.30	Tubing - 2-7/8", 6.5#, N-80, EUE, 8rd
1	1.10	SN - 2-7/8", EUE, 8rd, 2.25" ID
1	30.68	Tubing - 2-7/8", 6.5#, N-80, EUE, 8rd
1	6.30	Sub - 2-7/8", 6.5#, N-80, EUE, 8rd
1	0.77	X-over - 2-3/8" x 2-7/8", EUE, 8rd
1	2.54	Y-Tool, Weatherford - 1.053" drift instrument tube
1	10.02	Sub - 2-3/8", 4.7#, N-80, EUE, 8rd
1	0.78	X-over - 2-3/8" x 2-7/8", EUE, 8rd
1	13.78	Pump w/ Intake – Centrilift P8, Model 400PLSSD, 130 stage
1 1	6.11	Seal – Model FSB3 DB HL
]	8.16	Motor – Centrilift MSP, 45 Hp, 1495V/19A
1	4.10	Downhole pressure sensor, Centinel III
1	1.20	Centralizer 6" collapsible
	6100.83	EOT (6100.83' KB WLM)
Note:	Blanking plu	drain valve in this well. g in Y-Tool has a 5/8" OD catch rod city = 0.00579 Bbl/ft, Burst = 10570 psi, Joint Yield = 144960 lbs

Directional Data:

MD	<u>TVD</u>	Incl.	MD	TVD	<u>Incl.</u>
500	500	3.1	3500	3378	19.8
750	749	5.3	4000	3848	19.8
1000	997	12.1	4500	4322	19.3
1500	1485	10.9	5000	4793	20.1
1750	1731	13.8	5500	5262	19.7
2000	1966	21.7	6000	5738	15.9
2500	2426	20.1	6500	6216	17.2
3000	2901	16.1	6908	6610	12.2 E



Wolverine Federal 17-4 API # 43-041-30035 Covenant Field Section 17, T23S, R1W Sevier County, Utah

Wellhead Information

- Tubing head flange is 7-1/16", 5M with a 2-7/8" EUE 8rd top connection.
- Outer casing valve 13-3/8" x 9-5/8" annulus
- Inner casing valve 9-5/8" x 7" annulus

Stimulation

9/3//05: 6327' - 6419' w/ 5800 gal 7.5% HCI. ATR = 3.3 BPM, ATP = 3400 psi, ISDP = 2400 psi 6292' - 6310' w/ 2000 gal 7.5% HCI. ATR = 3.5 BPM, ATP = 2750 psi, ISDP = 2000 psi 3/11/08: 6303' 6310' w/ 3100 lba 30/40 mash Factors with Sandwards in Paltaface 300 fluid

3/11/08: 6292' - 6310' w/ 3100 lbs 20/40 mesh Econoprop with Sandwedge in Deltafrac 200 fluid, ATR = 25.3 BPM, ISDP = 5300 psi (after screen-out). Protechnics RA Sb-124 tracer in pad and IR-192 in sand stages.

5/3/12: 6550' - 6560' w/ 1000 gal 7.5% HCl. ATR = 0.6 BPM, ATP = 935 psi

5/6/12: 6490' - 6500' & 6517' - 6537' w/ 3000 gal 7.5% HCl ATR = 0.5 BPM, ATP = 2412 psi, ISIP = 1930 psi

Notes

Surface Location: Latitude = 38° 48' 19.4600", Longitude = -111° 56' 02.4750"

(7/21/05): Cement top at 5670' on CBL-CCL-GR

(1/30/08): Available Logs: DLL/MSFL, HRI, SDL/DSN, EMI, MRIL, CBL



Covenant Field Federal 17-4 API# 43-041-30035

SE/NW Sec 17, T23N, R1W

Sevier County, Utah

4/22/2012

Spot in service unit, hooked up pump lines.

4/23/2012

RUSU, ND wellhead, NU BOP's. RU cable spoolers and pulled out of hole with ESP. PU & tripped in hole with bit and casing scraper to PBTD, RU pump lines and reverse circulated well clean, RD pump lines and laid down 10 joints. SWIFN

Note: Moderate to severe corrosion was found on the motor, seal section and instrument tubing. All corrosion was below the pump intake and appeared to be from Co2. There was no corrosion on any of the BHA above the pump intake. See failures in the photo tab.

4/24/2012

Plan to pull out of hole with casing scraper / TIH with DFIT BHA / Swab well for rate prior to pumping DFIT Opened well, pulled out of hole with casing scraper, pick up and run in hole with DFIT BHA, set plug at 6355', set packer at 6230'. Pressure tested casing to 1000 psi. RU wireline unit and correlated plug and packer settings, RD and released wireline unit. SWIFN

Note: See DFIT BHA tab for details on the bottom hole assembly

Plan to pump DFIT

4/25/2012

Opened well, RU swab equipment and swabbed well as follows.

Swab runs - 7

Water cut - 20%

Average rate -151 bfpd

Average fluid level - 3750

Total fluid recovered - 34 bbls

Perf intervals open - 6292'-6350'

See 4-25 Swab report for details.

RD swab equipment, RU pump lines, opened bypass on packer, circulated 50 bbls of 4% KCL water, RD pump lines. RU Slickline unit and made 1.790" gauge ring run to confirm XN nipple depth, RIH with tandem pressure gauges and set off in the DFIT BHA, RIH with N test plug to 6220'. RU Halliburton pump equipment, pressure tested lines to 9500 psi. Pumped DFIT as follows

<u>Event</u>	Rate	Max pressure
Loaded hole with 3.7 bbls of 4% KCL	2 bpm	0 psi
Pumped 100 bbls 4% KCL	3.7 bpm	3625 psi
Slowed rate and continued pumping 4% KCL while landing N test plug	2 bpm	2800 psi

Landed plug and shut down pump. SWIFN

Note: There was not a notable breakdown during pumping.

Plan to leave well shut in for 24 hrs then pull out of hole with pressure gauges.

<u>4/26/2012</u> Opened well, 6500 psi on tubing, bled off pressure and pulled out of hole with downhole pressure gauges.

Rig crew travel home.

 4/27/2012
 Rig crew on days off

 4/28/2012
 Rig crew on days off

 4/29/2012
 Rig crew on days off

 4/30/2012
 Rig crew travel to location

Plan to swab 6292'-6310' & 6327'-6350' for post DFIT rate / Perforate 6550'-6560'

Page 1 of 22

Daily Activity

5/1/2012

•

Opened well, 0 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:

Swab runs - 17

Water cut - 17%

Average rate -350 bfpd

Average fluid level - 4000

Total fluid recovered - 116 bbls

Perf intervals open - 6292'-6310' & 6327'-6350'

See 5-1 Swab report for details.

Note: The water cut does not represent the actual oil water cut from these perf intervals, there was still 20 bbls of water that had not been recovered after pumping the DFIT. The swab data was gathered only to compare the rates pre and post DFIT.

RD swab equipment, pulled out of hole with plug and packer. RU wireline and perforated as follows:

Perf interval - 6550'-6560'

Titan Part # EXP 3325-321T

.41 entry hole

25 gram charges

45.16" penetration

4" EXP gun loaded 6 spf on 60° phasing.

RD and released wireline unit, picked up and tripped in hole with plug, retrieving head, 4' sub, HD packer, one joint, cup type seating nipple and tubing to surface. Set plug at 6580', set packer at 6482'. SWIFN Plan to swab perf interval 6550'-6560' for rate and clean up.

5/2/2012

Opened well, 0 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:

Swab runs - 8

Water cut - 0%

Average rate -50 bfpd

Average fluid level - 4000

Total fluid recovered - 41 bbls

Perf intervals open - 6550'-6560'

See 5-2 Swab report for details.

SWIFN, Plan to acidize perf interval 6550'-6560' / Swab for rate and clean up.

5/3/2012

Opened well, 0 psi tubing, 0 psi casing. RU Halliburton acid equipment and pumped acid on perf interval 6550' - 6560' as follows:

<u>Detail</u>	Bbls	Cumm	Max BPM	Max PSI
Pumped 26.34 bbls CF to fill tubing	26.34	26.34	4	0
Opened bypass on packer	~	~	~	~
Spotted 05.95 bbls 7 1/2% FE HCL	5.95	32.29	2	46
Spotted 11.90 bbls 7 1/2% FE HCL containing 50 buoyant balls	11.9	44.19	2	117
Spotted 05.95 bbls 7 1/2% FE HCL	5.81	50	2	117
Spotted 09.52 bbls 4% KCL with chemicals (CF)	9.59	59.59	2	117
Closed bypass on packer	~	~	~	~
Pumped CF	3.7	59.84		1100
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	3.7	63.54	0.6	1070

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF Chat days and actual for a second of the latest formation of the la	0.28	63.82	0.6	1070
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	63.91	0.6	1004
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	63.99	0.6	970
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	64.06	0.6	1046
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.11	0.6	1000
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.16	0.6	993
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.21	0.6	960
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.26	0.6	968
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.31	0.6	1020
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	64.37	0.6	1000
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.42	0.6	984
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.47	0.6	1020
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	64.53	0.6	1006
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.58	0.6	974
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.63	0.6	1023
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.68	0.6	990
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.73	0.6	981
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	64.79	0.6	986
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.04	64.83	0.6	986
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	64.89	0.6	1025
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	64.94	0.6	985
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.06	65	0.6	991
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.04	65.04	0.6	985
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.1	0.6	981
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.04	65.14	0.6	972
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	65.22	0.6	1050
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.27	0.6	1004
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.33	0.6	975
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.38	0.6	981
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.44	0.6	1043
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.49	0.6	1030
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.54	0.6	995
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.6	0.6	1017
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.65	0.6	985
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.7	0.6	984
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.75	0.6	982
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	65.81	0.6	1020
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	65.86	0.6	991
Shut down and waited for pressure to bleed off to 750 psi	0.05	05.04	0.0	000
Pumped CF	0.05	65.91	0.6	982
Shut down and waited for pressure to bleed off to 750 psi	0.00	65.07	0.0	4007
Pumped CF Chut days and writed for processing to blood affine 750 pair	0.06	65.97	0.6	1027
Shut down and waited for pressure to bleed off to 750 psi	0.05	66.02	0.6	995
Pumped CF Shut down and waited for procesure to blood off to 750 pai	0.05	66.02	0.6	990
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.05	66.07	0.6	980
Shut down and waited for pressure to bleed off to 750 psi	0.03	30.07	0.0	300
Pumped CF	0.07	66.14	0.6	1092
i unipod Oi	3.01	50.17	5.0	1002

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	66.2	0.6	1020
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	66.26	0.6	1063
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.33	0.6	1075
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.4	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	66.48	0.6	1088
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.55	0.6	1113
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.62	0.6	1089
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.69	0.6	1086
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	66.76	0.6	1101
Shut down and waited for pressure to bleed off to 750 psi		33.73		
Pumped CF	0.07	66.83	0.6	1065
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	66.89	0.6	1079
Shut down and waited for pressure to bleed off to 750 psi			0.0	
Pumped CF	0.07	66.96	0.6	1074
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.03	0.6	1067
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.1	0.6	1067
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.17	0.6	1070
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	67.23	0.6	1046
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	67.28	0.6	1030
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.35	0.6	1052
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	67.41	0.6	1053
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.48	0.6	1070
Shut down and waited for pressure to bleed off to 750 psi				•
Pumped CF	0.07	67.55	0.6	1050
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.06	67.61	0.6	1074
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.68	0.6	1092
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	67.75	0.6	1060
Shut down and waited for pressure to bleed off to 750 psi				1000
Pumped CF	0.07	67.82	0.6	1068
Shut down and waited for pressure to bleed off to 750 psi	0.00	67.00	0.0	1010
Pumped CF Shut down and waited for proceure to blood off to 750 no.	0.06	67.88	0.6	1040
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.06	67.94	0.6	1045
Shut down and waited for pressure to bleed off to 750 psi	0.00	01.34	0.0	1045
Pumped CF	0.07	68.01	0.6	1058
Shut down and waited for pressure to bleed off to 750 psi	0.07	00.01	0.0	1000
Pumped CF	0.06	68.07	0.6	1062
Shut down and waited for pressure to bleed off to 750 psi	0.00	00.07	0.0	1002
Pumped CF	0.07	68.14	0.6	1079
Shut down and waited for pressure to bleed off to 750 psi	0.0.	00.71	0.0	
Pumped CF	0.07	68.21	0.6	1054
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.04	68.25	0.6	873
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	68.31	0.6	1046
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	68.41	0.6	1057
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.48	0.6	1111
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	68.56	0.6	1122
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.63	0.6	1129
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.7	0.6	1095
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	68.77	0.6	1061
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	68.83	0.6	1048
Shut down and waited for pressure to bleed off to 750 psi	0.07	00.0	0.0	4075
Pumped CF	0.07	68.9	0.6	1075
Shut down and waited for pressure to bleed off to 750 psi	0.07	60.07	0.6	4004
Pumped CF Shut down and waited for propoure to blood off to 750 poi	0.07	68.97	0.6	1064
Shut down and waited for pressure to bleed off to 750 psi	0.07	60.04	0.6	1088
Pumped CF	0.07	69.04	0.6	1000

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.11	0.6	1063
Shut down and waited for pressure to bleed off to 750 psi	0.07	00.11	0.0	1000
Pumped CF	0.06	69.17	0.6	1070
Shut down and waited for pressure to bleed off to 750 psi		33,		
Pumped CF	0.08	69.25	0.6	1112
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	69.31	0.6	1072
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	69.39	0.6	1078
Shut down and waited for pressure to bleed off to 750 psi		55.55		
Pumped CF	0.06	69.45	0.6	1069
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.52	0.6	1067
Shut down and waited for pressure to bleed off to 750 psi			0.0	
Pumped CF	0.07	69.59	0.6	1084
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	69.67	0.6	1090
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.74	0.6	1078
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.81	0.6	1095
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	69.88	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	69.94	0.6	1057
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.02	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.09	0.6	1104
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.16	0.6	1104
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	80.0	70.24	0.6	1104
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.31	0.6	1114
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.39	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.46	0.6	1097
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.54	0.6	1100
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.06	70.6	0.6	1083
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.68	0.6	1096
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.76	0.6	1111
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.83	0.6	1113
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	70.9	0.6	1102
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	70.98	0.6	1113
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	71.05	0.6	1116
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	71.13	0.6	1106
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	71.21	0.6	1122
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	71.28	0.6	1115
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	71.36	0.6	1117
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	71.43	0.6	1120
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	71.51	0.6	1110
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	71.6	0.6	980
Shut down and waited for pressure to bleed off to 900 psi				
Pumped CF	0.03	71.63	0.6	990
Shut down and waited for pressure to bleed off to 900 psi				
Pumped CF	0.05	71.68	0.6	1084
Shut down and waited for pressure to bleed off to 900 psi				
Pumped CF	0.04	71.72	0.6	987
Shut down and waited for pressure to bleed off to 900 psi				
Pumped CF	0.06	71.78	0.6	1138
Shut down and waited for pressure to bleed off to 900 psi				
Pumped CF	0.05	71.83	0.6	1192
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	71.92	0.6	1315
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	72	0.6	1107
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	72.07	0.6	1092

Churt down and waited for massacras to blood off to 750 and				
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.15	72.22	0.6	1088
Shut down and waited for pressure to bleed off to 750 psi				,,,,,
Pumped CF	0.08	72.3	0.6	1094
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	72.37	0.6	1069
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	72.44	0.6	1045
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	72.52	0.6	1097
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	72.58	0.6	1044
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	72.66	0.6	1090
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	72.73	0.6	1037
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	72.79	0.6	1009
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.06	72.85	0.6	1047
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	72.94	0.6	1126
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.01	0.6	1082
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.08	0.6	1058
Shut down and waited for pressure to bleed off to 750 psi	0.07	70.45		4070
Pumped CF	0.07	73.15	0.6	1079
Shut down and waited for pressure to bleed off to 750 psi	0.07	72.22	0.6	1066
Pumped CF Shut down and waited for pressure to bleed off to 750 psi	0.07	73.22	0.6	1066
Pumped CF	0.07	73.29	0.6	1052
Shut down and waited for pressure to bleed off to 750 psi	0.07	10.20	0.0	1002
Pumped CF	0.07	73.36	0.6	1085
Shut down and waited for pressure to bleed off to 750 psi	0.0.		0.0	
Pumped CF	0.07	73.43	0.6	1045
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.5	0.6	1085
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.57	0.6	1058
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	73.65	0.6	1087
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.08	73.73	0.6	1098
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.8	0.6	1046
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	73.87	0.6	1108
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.04	73.91	0.6	1090
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	74.02	0.6	1077
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	74.1	0.6	1100
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.19	74.29	0.6	1185
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	74.37	0.6	1156
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	74.46	0.6	1179
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	74.55	0.6	1166
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	74.63	0.6	1167
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	74.72	0.6	1177
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	74.8	0.6	1134
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.05	74.85	0.6	1189
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.13	74.98	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.07	0.6	1182
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.16	0.6	1181
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.25	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	75.35	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.44	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	75.52	0.6	1099
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	80.0	75.6	0.6	1161

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	75.71	0.6	1181
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.8	0.6	1169
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	75.88	0.6	1142
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	75.97	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.05	0.6	1117
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.13	0.6	1136
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	76.2	0.6	1040
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.07	76.27	0.6	1055
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	76.36	0.6	1176
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	76.45	0.6	1160
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.53	0.6	1138
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.61	0.6	1151
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.69	0.6	1139
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	76.78	0.6	1167
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	76.87	0.6	1145
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	76.95	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.04	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi		77.40		4477
Pumped CF	0.09	77.13	0.6	1177
Shut down and waited for pressure to bleed off to 750 psi	0.00	77.04	0.0	4400
Pumped CF	0.08	77.21	0.6	1126
Shut down and waited for pressure to bleed off to 750 psi	0.00	77.0	0.6	1470
Pumped CF Shut down and waited for procesure to blood off to 750 pai	0.09	77.3	0.6	1170
Shut down and waited for pressure to bleed off to 750 psi	0.09	77.39	0.6	1155
Pumped CF Shut down and waited for pressure to bleed off to 750 psi	0.05	11.38	0.0	1100
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.08	77.47	0.6	1152
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.56	0.6	1135
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.65	0.6	1170
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	80.0	77.73	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	80.0	77.81	0.6	1145
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	77.9	0.6	1159
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	78	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.09	0.6	1151
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	80.0	78.17	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	78.25	0.6	1144
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.34	0.6	1153
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.43	0.6	1176
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.52	0.6	1169
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.61	0.6	1170
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	78.7	0.6	1173
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	78.8	0.6	1180
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	80.0	78.88	0.6	1166
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	78.98	0.6	1179
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.07	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.16	0.6	1183
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.25	0.6	1144
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.34	0.6	1166

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	79.42	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.51	0.6	1178
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.6	0.6	1140
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.69	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.78	0.6	1171
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.87	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	79.96	0.6	1173
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.05	0.6	1160
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	80.13	0.6	1153
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	80.23	0.6	1177
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.32	0.6	1152
Shut down and waited for pressure to bleed off to 750 psi	0.4	00.40	0.0	4470
Pumped CF Shut down and waited for pressure to bleed off to 750 psi	0.1	80.42	0.6	1176
Pumped CF	0.09	80.51	0.6	1148
Shut down and waited for pressure to bleed off to 750 psi	0.00	00.51	0.0	1140
Pumped CF	0.09	80.6	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi	0.00		5.5	
Pumped CF	0.09	80.69	0.6	1169
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.78	0.6	1158
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.87	0.6	1169
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	80.96	0.6	1161
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.05	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.14	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	81.22	0.6	1139
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.09	81.31	0.6	1173
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.4	0.6	1167
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.49	0.6	1165
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.58	0.6	1143
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.67	0.6	1150
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.76	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.85	0.6	1163
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	81.94	0.6	1161
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.03	0.6	1162
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.12	0.6	1145
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	82.2	0.6	1154
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	82.3	0.6	1161
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.39	0.6	1141
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.48	0.6	1151
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.57	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.66	0.6	1141
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.75	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.08	82.83	0.6	1142
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	82.92	0.6	1148
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	83.01	0.6	1157
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	83.1	0.6	1170
Shut down and waited for pressure to bleed off to 500 psi				
Pumped CF	0.13	83.23	0.6	1138

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	83.33	0.6	1178
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	83.42	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.26	83.68	0.6	1280
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	83.78	0.6	1207
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	83.87	0.6	1195
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	83.97	0.6	1192
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.07	0.6	1197
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.17	0.6	1211
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.27	0.6	1207
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	84.38	0.6	1207
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.48	0.6	1211
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.58	0.6	1241
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.68	0.6	1214
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	84.79	0.6	1223
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.89	0.6	1215
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	84.99	0.6	1231
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.09	0.6	1230
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.19	0.6	1193
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.29	0.6	1202
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.39	0.6	1230
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	85.5	0.6	1241
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.1	85.6	0.6	1185
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.7	0.6	1194
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.8	0.6	1241
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	85.9	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86	0.6	1197
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.1	0.6	1229
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.2	0.6	1209
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.3	0.6	1203
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.4	0.6	1181
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.5	0.6	1211
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.6	0.6	1207
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.7	0.6	1194
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.8	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	86.89	0.6	1179
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	86.99	0.6	1176
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	87.09	0.6	1187
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	87.19	0.6	1172
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	87.28	0.6	1189
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	87.39	0.6	1225
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	87.49	0.6	1202
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	87.6	0.6	1231
Shut down and waited for pressure to bleed off to 750 psi				46.1=
Pumped CF	0.1	87.7	0.6	1245

Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	87.8	0.6	1165
,	0.1	01.0	0.6	1105
Shut down and waited for pressure to bleed off to 750 psi Pumped CF	0.44	97.04	0.6	1040
•	0.11	87.91	0.6	1249
Shut down and waited for pressure to bleed off to 750 psi	0.44	22.25		4000
Pumped CF	0.14	88.05	0.6	1226
Shut down and waited for pressure to bleed off to 750 psi	2.22	00.44		4400
Pumped CF	0.09	88.14	0.6	1139
Shut down and waited for pressure to bleed off to 750 psi				4450
Pumped CF	0.09	88.23	0.6	1158
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.12	88.35	0.6	1252
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	88.44	0.6	1156
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	88.54	0.6	1200
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	88.64	0.6	1210
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	88.73	0.6	1182
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	88.83	0.6	1173
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	88.92	0.6	1162
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	89.02	0.6	1184
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	89.12	0.6	1187
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	89.21	0.6	1166
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	89.3	0.6	1206
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	89.39	0.6	1160
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	89.49	0.6	1149
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	89.58	0.6	1201
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	89.68	0.6	1182
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	89.78	0.6	1217
Shut down and waited for pressure to bleed off to 750 psi				

Pumped CF	0.09	89.87	0.6	1186
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	89.96	0.6	1206
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	90.07	0.6	1188
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.17	0.6	1233
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.27	0.6	1210
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.37	0.6	1202
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	90.46	0.6	1155
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.56	0.6	1241
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.11	90.67	0.6	1217
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.77	0.6	1178
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	90.86	0.6	1198
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	90.96	0.6	1178
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	91.05	0.6	1158
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.1	91.15	0.6	1213
Shut down and waited for pressure to bleed off to 750 psi				
Pumped CF	0.09	91.24	0.6	1163
01.4.1				

Note: Displaced acid 1.49 bbls past the top perf, after the well sits for the night there should be approximately 6.49 bbls of water past the top perf depth.

Note: There were no signs of communication with the open perforations above this interval.

General details	<u>Pressure</u>
ISIP	Not available
5 Min	413 psi
10 Min	213 psi
15 Min	119 psi
Max Treating Pressure	1315 psi
Max Acid Rate	0.6 bpm
Avg Treating Pressure	935 psi
Load to Recover	64.9 bbls

Note: See 5-3 Acid stim 10 second data tab for details

Shut down for 5,10,15

Plan to swab perf intervals 6550'-6560' for rate and clean up.

5/4/2012

Opened well, 0 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:

Swab runs - 12

Water cut - 50%

Average rate -66 bfpd

Average fluid level - 5850

Total fluid recovered - 72 bbls

Perf intervals open - 6550'-6560'

See 5-4 Swab report for details.

Note: Water cut is not accurate due to the slow fluid entry.

Released packer and pulled out of hole with tubing and packer, RU wireline unit and perforated well as follows.

Perf interval - 6490'-6500' & 6517'-6537'

Titan Part # EXP 3325-321T

.41 entry hole

25 gram charges

45.16" penetration

4" EXP gun loaded 6 spf on 60° phasing.

RD and released wireline unit, picked up and tripped in hole with retrieving head, 4' sub, HD packer, one joint, cup type seating nipple and tubing to surface. Latched onto plug and set at 6545', set packer at 6447'. SWIFN

Plan to swab perf intervals 6490'-6500' & 6517'-6537' for rate and clean up.

5/5/2012

Opened well, 0 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:

Swab runs - 17

Water cut - 5%

Average rate -520 bfpd

Average fluid level - 4000

Total fluid recovered - 116 bbls

Perf intervals open -6490'-6500' & 6517'-6537'

See 5-5 Swab report for details.

Plan to pump acid on perf intervals 6490'-6500' & 6517'-6537'

5/6/2012

Opened well, 30 psi tubing, 0 psi casing. RU Halliburton acid equipment and pumped acid on perf intervals 6490'-6500' & 6517'-6537' as follows:

<u>Detail</u>	Bbls	Cumm	Max BPM	Max PSI
Pumped CF to fill tubing	0	0	0	0
Opened bypass on packer	~	~	~	~
Spotted 7 1/2% FE HCL	9.52	9.52	2	390
Spotted 7 1/2% FE HCL containing 150 buoyant balls	23.88	33.4	2	170
Closed bypass on packer	~	~	~	~
Pumped 7 1/2% FE HCL	13.43	46.83	0.5	2500
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	0.68	47.51	0.5	2500
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	0.69	48.2	0.5	2500

Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	0.72	48.92	0.5	2490
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	0.62	49.54	0.5	2491
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped 7 1/2% FE HCL	21.96	71.5	0.4	2720
Shut down and waited for pressure to bleed off to 1500 psi				
Pumped CF	26.5	98	0.7	2770

Note: There were no signs of communication with the open perforations above this interval.

General details	<u>Pressure</u>
ISIP	1930 psi
5 Min	374 psi
10 Min	217 psi
15 Min	145 psi
Max Treating Pressure	2770 psi
Max Acid Rate	0.6 bpm
Avg Treating Pressure	2412 psi
Load to Recover	60.6 bbls

Note: See 5-6 Acid stim 1 second data tab for details

RD and released acid equipment, RU swab equipment and swabbed well as follows:

Swab runs - 15

Water cut - 0%

Average rate - 367 bfpd

Average fluid level - 4250

Total fluid recovered - 123 bbls

Perf intervals open -6490'-6500' & 6517'-6537'

See 5-6 Swab report for details.

Plan to continue swabbing for 1/2 day / Pull tbg and pkr / Perforate 6252'-6266' / TIH with tbg & pkr

Well flowed back 10 bbls of oil to the frac tank overnight, RU swab equipment and swabbed well as follows:

Swab runs - 31

5/7/2012

5/8/2012

Water cut - 3%

Average rate - 573 bfpd

Average fluid level - 4850

Total fluid recovered - 233 bbls

Perf intervals open -6490'-6500' & 6517'-6537'

See 5-7 Swab report for details.

SWIFN

Plan to reset the plug / Pull tbg and pkr / Perf 6252'-6266' / TIH with tbg / Swab for rate and clean up.

Opened well, 90 psi tubing, 0 psi casing. Released plug and packer, reset plug at 6281', pressure tested to 1000 psi, RU swab equipment and swabbed fluid level down to 2500'. RD swab equipment, released packer and pulled out of the hole with tubing and packer. RU wireline unit and perforated well as follows:

Perf interval - 6252'-6266'

Titan Part # EXP 3325-321T

Page 20 of 22

.41 entry hole

25 gram charges

45.16" penetration

4" EXP gun loaded 6 spf on 60° phasing.

RD and released wireline unit, picked up and tripped in hole with retrieving head, 4' sub, HD packer, one joint, cup type seating nipple and tubing to surface. Set packer at 6165', RU pump line and pressure tested packer to 1000 psi. RD pump lines, RU swab equipment and swabbed well as follows.

Swab runs - 14

Water cut - 55% and falling

Average rate - 780 bfpd

Average fluid level - 3750

Total fluid recovered - 135 bbls

Perf intervals open -6252'-6266'

See 5-8 Swab report for details.

SWIFN

Note: Corrosion was found in the tubing collars while tripping in the hole with tubing today, the corrosion was noticed at 1500' from surface. New tubing collars were installed from 1500' to the surface. There may be more collar corrosion below the 1500' depth that had not been noticed previously. Inspections below the 1500' level will be made during the next pipe trip. Also note that the tubing pins had corrosion as well. See tubing and collar corrosion photos in the photos tab.

Plan to continue swabbing for 1/2 day until the fluid cut stabilizes / move plug and packer / swab all intervals together for rate and cut.

5/9/2012

Opened well, 40 psi tubing, 0 psi casing. RU swab equipment and swabbed well as follows:

Swab runs - 13

Water cut - 40%

Average rate - 722 bfpd

Average fluid level - 3600

Total fluid recovered - 123 bbls

Perf intervals open -6250'-6266'

See 5-9 Swab report for details.

RD swab equipment, released packer, RU swab equipment and made two runs to remove oil from tubing.

RD swab equipment, released plug and reset at 6572', set packer at 6185'. RU swab equipment and swabbed all perf intervals as follows:

Swab runs - 12

Water cut - 40%

Average rate - 833 bfpd

Average fluid level - 3450

Total fluid recovered - 121 bbls

Perf intervals open -6250'-6560'

See 5-9a Swab report for details.

SWIFN

Plan to release pkr and plug / pull out of hole with tubing changing corroded tubing collars as needed.

Opened well, 30 psi tubing, 0 psi casing. Bled pressure off tubing, released packer and plug, pulled out

5/10/2012

of the hole with tubing plug and packer. SWIFN

Note: Changed the remaining corroded tubing collars. All collars were changed from surface to 3000', the remaining tubing collars in the string had no signs of corrosion.

Plan to install ESP and turn well into production.

5/11/2012

Opened well, 0 psi. RU cable spoolers, picked up and run in hole with 6" centralizer, Centinel, motor, seal, pump, 2 3/8" x 2 7/8" XO, 10' x 2 3/8" sub, Y-tool, 2 3/8" x 2 7/8" XO, 6' x 2 7/8" sub, 1 joint 2 7/8" N-80 tbg, cup type SN and 191 joints N-80 tubing to surface. Made final splice on lower pig tail, landed well, ND BOP's NU wellhead. Turned well into production.

Note: Repaired cable splice that's aproximatly 1000' from surface.

This well is currently producing from the upper and lower Navajo

<u>5/11/2012</u>

07 Hour production, 045 bopd, 128 bwpd, 50 Hz, BHP 1352

<u>5/12/2012</u>

24 Hour production, 216 bopd, 283 bwpd, 50 Hz, BHP 1522 $\,$

5/13/2012

24 Hour production, 267 bopd, 136 bwpd, 50 Hz, BHP 1594

24 Hour production, 308 bopd, 153 bwpd, 55 Hz, BHP 1342

Supervisor:

7 ony E. Cook

Rig Operator:

Robert Miller